The Magazine For Hewlett-Packard Enterprise Computing

HP Professional

AUGUST 1998

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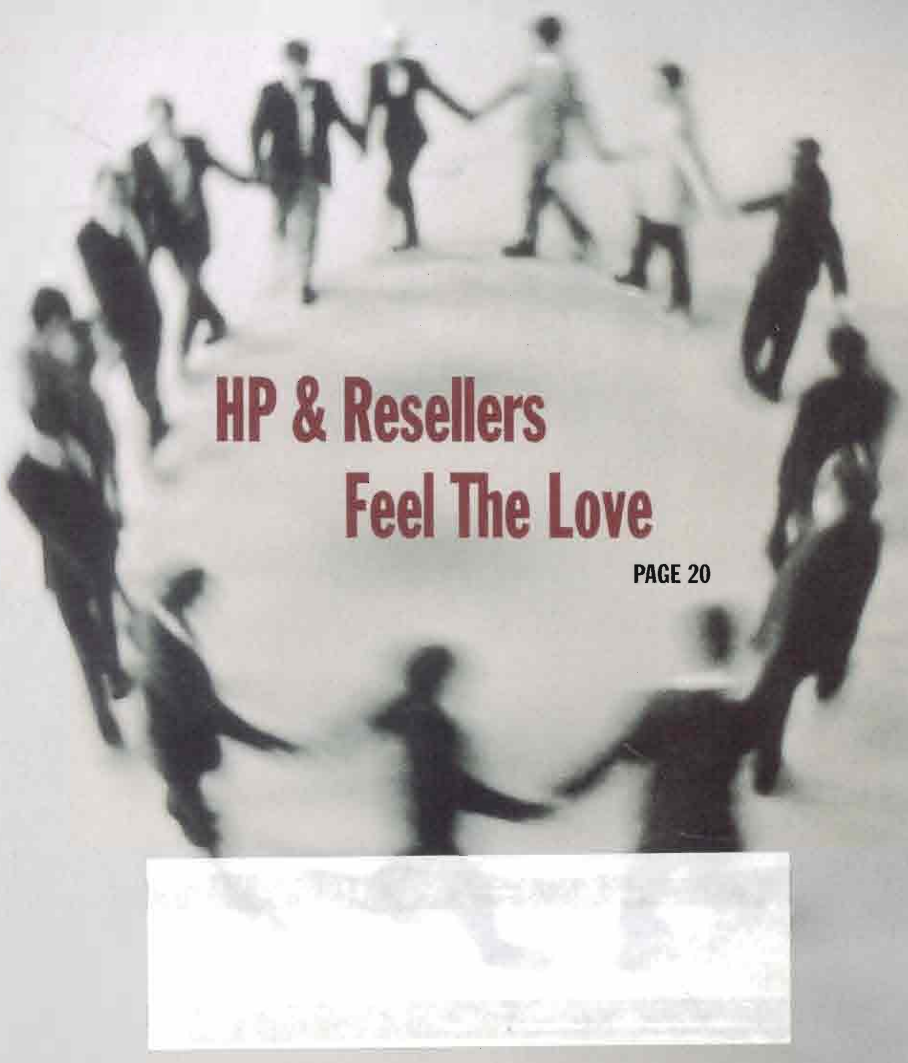

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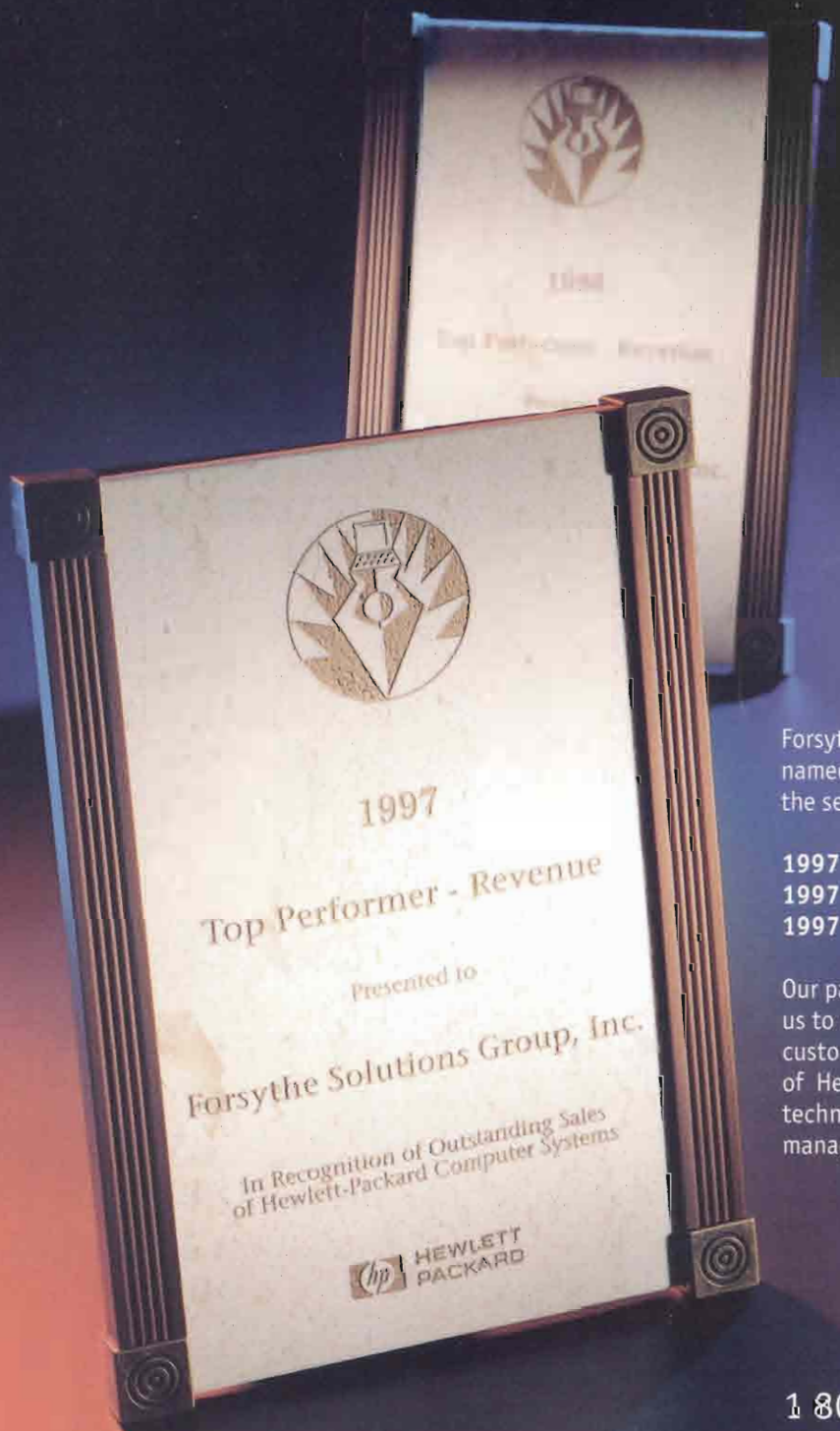

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Learn To Earn

Wolf Rehder,
HP's Worldwide UNIX Program Manager

When it comes to technology-based training, I hear the poet Lord Tennyson speaking about man's "blind and naked ignorance." When it comes to the solution, I hear St. Thomas Aquinas striving for "knowing what he ought to do." During the past three years, technology has expanded the capabilities for delivering technical training.

So, why hasn't Web-based training taken off like Viagra? In spite of the use of hypertext, animation, scanned-in images and more recently, Java script and applets enlivening the material, the two-dimensional screen presentations were not much more exciting than reading a book and turning its pages. Web-based training was largely uninspiring, tiring, boring. The emphasis was on how to train, not how to learn.

- Surveys have repeatedly shown that the majority of students likes to learn in groups with like-minded peers, in a safe classroom environment, away from their work place, without interruptions and mentored by an experienced instructor. For HP, instructor reputation has consistently been the number one differentiator.
- Most technical professionals prefer "learning by doing" and this includes learning by making mistakes, being corrected and understanding the "why?" Related to the bias towards "hands-on" learning is the desire to learn a set of new skills at the time they are needed on the job, in particular when mastery has an immediate impact either personally (recognition, pay) or for the company (job effectiveness).

How can the attitude of favoring such a rich learning experience be reconciled with the avowed frugality of the economic training buyer on the one hand and, on the other hand, the training vendor's desire to employ alternative delivery technologies? The compromise shows: International Data Corporation (IDC) writes in their report 1997 *Worldwide and U.S. IT Training and Education Markets and Trends* that instructor-led training, reformatted for the virtual (Web-based) classroom, "will show strong growth." Complementing this instructor focus, however, is IDC's further assessment that the two fastest growing delivery modes are distance learning via corporate intranets (81 percent CAGR between 1996 and 2001) and distance learning via the Internet (241 percent CAGR). Some of these classes will be monitored by remote instructors, so that the learning experience can be scheduled in advance (or synchronous) for all participants.

Others will be self-paced. Furthermore, while lack of network performance and Web access are still obstacles to providing full-motion video, graphics and simulations, there will be an intermittent market for hybrid CD-ROM and Web-based training scenarios that simulate real-world work situations.

Therefore, we'll see a combination of several delivery modes. Still growing and popular with students is traditional classroom learning with an expert instructor, especially when real-world, hands-on experience is necessary. Synchronous distance learning with a live mentor and self-paced learning via the Web will please employees like Response Center engineers, who cannot easily leave their jobs for several days.

The continued success of other non-Web computer-based training (CBT), including hybrid CD-ROM and other multimedia, will depend on how pervasive the Web becomes. All of the above learning technologies will still be accompanied by text-based learning from books, manuals and white papers. In addition, many software vendors are shipping their applications with online help "books," sometimes called electronic performance support systems (EPSS), which usually provide user-friendly, context-sensitive learning at the moment it is needed.

AT PRESS

New HP Switches Drive Down Price Per Port

According to Mark Thompson, HP's product marketing manager for the Workgroup Network Division, HP is "stealing a page out of the PC playbook" in marketing the just announced ProCurve Switches 4000M and 2400M.

"Like PCs, the world is headed towards a commodity attitude towards network management products" where price and brand awareness are the important selling points, he says. Thompson adds that the new 10/100 switches feature an "extremely aggressive price point" of $99 per port, significantly besting the industry benchmark of $150 per port.

Both switches come with HP TopTools for Hubs & Switches software and both feature Web-based administration, IP multitasking (IGMP) and IEEE 802.1p and 802.1q VLAN tagging port trunking to ensure that increased bandwidth demands don't slow network performance.

The new TopTools for Hubs & Switches allows for instant recognition and monitoring of managed hubs. At startup the software asks if the operator wants to manage desktops or switches. It includes the "optimize button," a feature unique to TopTools, that collects network performance data and offers specific recommendations and measures benefits that may be realized.

The software also comes with the "find, fix and inform" component that does just that: finds problems occurring on the network, fixes them if possible (i.e. shutting down a misbehaving port vs. repairing a cable cut) and informs the operator of the problem and resolution.

The 24-port ProCurve Switch 2400M sells for $2,375 and the 40-port ProCurve Switch 4000M is $3,955. For more information, go to www.hp.com/go/network_city.

HP AND PSINET TEAM ON E-SERVICES

HP and PSINet have combined on a long-term, global, strategic alliance to provide businesses using the Internet with an integrated package of software, hardware and network-management services to support dedicated hosting of mission-critical applications.

PSINet (Herndon, Va.) is a global, facilities-based Internet Protocol data communications carrier focused on mid-sized businesses. "Those companies are beginning to see the Internet as a critical business tool, not just a curiosity anymore," says Patty O'Brien, HP's Internet solutions program manager. The challenge, according to her, is to raise their confidence and comfort level of the reliability of the technology.

With HP's help, PSINet will bring three new, never-before-offered services to Web-hosting capabilities. A customer wishing to bring a mission-critical application online will now be able to choose a HP 9000 Enterprise Server, NetServer or some custom HP architecture designed by PSINet that will provide a dedicated server for a specific application, or a dedicated server for their Web site.

In addition, PSINet is standardizing on a combination of OpenView and Network Node Manager to provide network management facilities.

"It's because of HP's technology that [PSINet] feels they can branch out and offer these new services," adds O'Brien. "It's a combination of our Web Quality of Service technologies and expertise in dealing with mission-critical data center applications that's making mid-sized customers feel comfortable outsourcing."

Customers already using the new services include Israel-based Mirabilis LTD, the makers of Internet e-mail product ICQ and the offspring of PBS' purple dinosaur, barneyonline.com.

The HP and PSINet service package is available now in the United States and will be available internationally as PSINet completes an expansion of data center facilities in Toronto, London and Amsterdam.

THE NEON XEON

Intel's got a new processor, so HP will have a new NetServer.

The Pentium II Xeon, unveiled by Intel in June and designed for mid-range servers and workstations, shined a bright light by setting an industry best four-processor TPC-C result with a rate of 18,127.40 tpmC and price/performance rate of $26.06/tpmC on a Compaq ProLiant 7000 6/400 with Windows NT 4.0 and SQL Server 7.0.

With those lightning fast results, HP has announced it will add a new high-end model to the NetServer L series with the new processor, expected to be available in quantity later this year. HP claims that the new addition will be optimized for data-center environments and, if you who don't want to wait, an upgrade will be available for those who buy now.

INNOVATIVE "IGNITE-ION" OF INTERNET IMAGES

Whether you're building a state-of-the-art online catalog, or you just want to show the world a picture of your family pet, HP's new OpenPix ImageIgniter will make your snapshot sparkle.

The software, along with a new program called "ImageIgnite Your Site," is expected to enhance Web commerce and communications by letting users control how they view and print Internet images and providing Web site owners with tools to track and analyze how users interact with their images.

A free, 45 day evaluation copy is available for Web developers and software vendors, OpenPix ImageIgniter is available for $4,995 per CPU and the OpenPix developer subscription sells for $495. A mini-demo can be viewed at image.hp.com.

COMPAQ, HP VIE OVER OPENMAIL

Digital Equipment Corporation, just before the finalization of their acquisition by Compaq, announced a program aimed at migrating HP OpenMail users to Microsoft Exchange or integrating Exchange into their OpenMail environment.

Jacqueline Kahle, Compaq's vice president of messaging and collaboration, says the impetus for the program grew out of Digital's own internal experience with migrating to Exchange several years ago. "We realized that enterprise customers may want to move from other mail systems like IBM Profs or Banyan Mail and consolidate to one system like Exchange."

Penning the program as "essentially a service offering," Kahle breaks down the process into five steps — planning, design, architecture, integration and maintenance. Having had this methodology in place for two years has given Compaq, according to Kahle, the chance to "fine-tune the operation — we've learned from our pitfalls."

Asked why OpenMail users may want to change, Kahle says that "pre 5.1 [OpenMail] version was not Year 2000 compliant. Administrators have to make a decision to change or upgrade." She adds that in many enterprise networks, OpenMail is one component of a larger e-mail system. She cites as an example a Swedish company that recently migrated 7,000 OpenMail users to Exchange as part of a much larger, enterprise-wide consolidation.

HP, in a related announcement, has designed its "OpenMail Roadmap for the New Millennium." In that announcement, Joe Beyers, general manager of HP's Internet Software Business Unit, says that HP will "work carefully to determine which messaging solution fits best into a customer's environment...OpenMail...or Exchange."

Several new pathways on the road map include the introduction of parallel queuing architecture that will improve OpenMail's throughput several-fold on high-end machines and hierarchic storage management (HSM) which will allow for the automatic archiving of little-used information.

For more information on Compaq's migration offerings, go to www.digital.com/messaging. For HP's roadmap, check www.hp.com/go/openmail.

HP ENTRUSTS PKI TECHNOLOGY

HP and Entrust Technologies say they intend to extend their relationship to include enterprise security products for e-business solutions. Designed to automatically secure data exchanged between business processes and business-to-business transactions, the products will make use of Entrust's public key infrastructure (PKI) and HP's 9000 Enterprise Servers.

Products resulting from the pairing will create enhanced security in Virtual Private Networks (VPN). Initially, they will be based on IPSec technology for HP-UX, a standards-based security technology that enables VPNs and remote access for multivendor, end-to-end communications over the public Internet. HP plans to use EntrustIPSec Negotiator Toolkits to expedite their integration with the Entrust PKI.

Look for new products during the first half of 1999.

news threads

NetServer Adds Fire

Stealing a page from their 9000 Enterprise Server product catalog, HP is extending its market-tested, high-availability, high-capacity fibre-channel clustering technology to its NetServer.

Certified for use with Microsoft Cluster Server software, new NetServer products include the HP AutoRAID Disk Array Model 12H (available by year end 1998 starting at $30,000), High Availability Disk Array Model 30/FC (available now starting at $40,000) and the Symmetrix Enterprise Storage systems (available by end of summer).

Large, Larger, Largesse

If database administration is your job, HP, Microsoft and EMC want to make your life easier by announcing a joint effort to make large-scale Microsoft SQL Server 7.0 databases accessible to enterprise customers.

Working with a NetServer LX Pro system running Windows NT Server 4.0, newly released SQL Server 7.0 and EMC's Symmetrix Enterprise Storage system, databases of 500GB or more were created, loaded, indexed and deployed in a few days instead of the usual weeks or months, proving, according to HP, that "the symmetric multiprocessing capabilities of four-way processing can optimize database queries effectively."

More information about continued SQL Server 7.0 database optimization efforts will be available soon in white papers at www.hp.com/netserver/techlib or www.microsoft.com/SQL.

Can We Add More Elvis?

Record capacity has jumped to 5.2GB, twice the current 2.6GB limit, on HP's new magneto-optical jukeboxes designed for HP 9000 Enterprise Servers and HP-UX.

The family of optical-storage products will range in capacity from the 5.2GB desktop unit to a 1.2TB high-end jukebox. The jukebox

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allows users to choose between one and 10 drives and between 16 and 238 cartridge slots. Prices will range accordingly from $9,600 to $105,200.

What? No Popcorn?

Buy a new HP Pavilion PC with a DVD-ROM drive and HP will spring for three DVD rentals.

The promotion is co-sponsored by NetFlix.com (www.netflix.com), an online video store that rents and sells DVD movies. HP Pavilion PC customers can rent the DVD movies of their choice from an inventory of 1,400 DVD films. Current owners of HP Pavilion PCs with DVD-ROM drives are also eligible.

The promotion is part of HP's introduction of the HP Pavilion 8370 and 8380 PCs, powered by Pentium II 350MHz and 400MHz processors and 2x DVD-ROM drives.

> **"Competition has closed the gap. Execution just isn't what it used to be."**
>
> — Lew Platt referring to HP's recent lackluster performance.
> Business Week, July 13, 1998.

Digi Passes NetServer Compatibility

In tests conducted at HP's labs in Santa Clara, Calif., Digi International (Minneapolis, Minn.) has certified compatibility of their server-based communications products with HP's NetServer.

HP engineers tested Digi's AccelePort Xr 920 asynchronous adapters for high-speed remote access, the AccelePort Xem system for server-based, expandable analog 64 remote access ports and DataFire adapters for high-speed ISDN Basic rate interface connections.

The tests were conducted on HP's NetServer E45, LCII, LHII and LX Pro systems running operating systems from Microsoft, Novell and SCO.

CROSS ONE OFF THE CROSSBAR

In March of this year, HP, Data General and Axil Computer combined technology and marketing savvy to form the Crossbar Coalition as a way to push Axil's Adaptive Memory Crossbar architecture as the de-facto standard for eight-way Pentium, Windows NT servers (see News & Views, May, 1998).

Last month, the coalition shrunk by one.

Hyundai Electronics America, Axil's parent company, has decided to absorb the operation of their crossbar subsidiary and refocus production around their traditional core markets.

The obvious question, since the philosophy of Crossbar was predicated on the use of Axil's unique memory architecture, is "What happens to the coalition and, maybe more importantly, what happens to HP's eight-way philosophy?"

"It has absolutely no impact whatsoever," Stefano Paoletti, HP's product manager for eight-way servers answers emphatically.

Paoletti, adding that their commitment to the NetServer LXr Pro8 NT server remains steadfast, says that HP holds the rights to manufacture the mother board and has lined up an as yet unnamed alternate provider for the underlying chipset technology for future Pentium II Xeon servers.

HP'S PRAESIDIUM PARCELS NEW SECURITY SERVER

HP has started shipping the Authorization Server, the newest member of their Praesidium family of security products and the first one capable of establishing and managing trusted access domains among multiple companies, over an extranet.

A trusted access domain identifies individuals who are working together, the business processes that will be shared and the access control associated with using those business processes. To support the increasing use of the Web as a fundamental tool for collaborating with partner companies, the HP Authorization Server allows "snap-in" rules-based authorization to Web content and any Web-enabled legacy application.

Bill Sudlow, HP's senior director for product planning and development, explains that the security administrator for the host company can establish rules and resources at their site and allow the actual user administration to be administered at the partner company's site. He adds that those rules can be Boolean-based and can drill down to specific objects or to the field level.

For information, go to www.hp.com/go/security.

A CO-OPERATIVE INTERNET VISION

HP's new Covision program is a portfolio of strategic alliances with Internet application providers and channel partners that will combine their capabilities with HP products and make it easier to provide customers with Internet products and services.

Greg Mihran, manager of Internet business development for HP's Commercial Channels Organization, touts the "match-making" aspects of the program.

He cites as an example a strong Internet commerce vendor who sells direct to Fortune 500 accounts and has no relationship with a hardware supplier. Covision will handpick a HP corporate reseller and provide incentive to bundle their hardware expertise with that vendor's software package.

Mihran has targeted innovative application suppliers whose products can be encompassed by any of five Internet categories — control, content, communication, collaboration and commerce.

Claiming "due diligence," Mihran has paired with several venture capitalists to ferret out those leading edge ISVs. To date, only 15 percent of those partners have existing relationships with HP and, underscoring their commitment to making the right connection between vendors, only 22 ISVs involved in the program have been announced out of the "over 50" already signed up by Mihran. The rest, he says, won't be "made public until they are match-maked with an appropriate channel partner."

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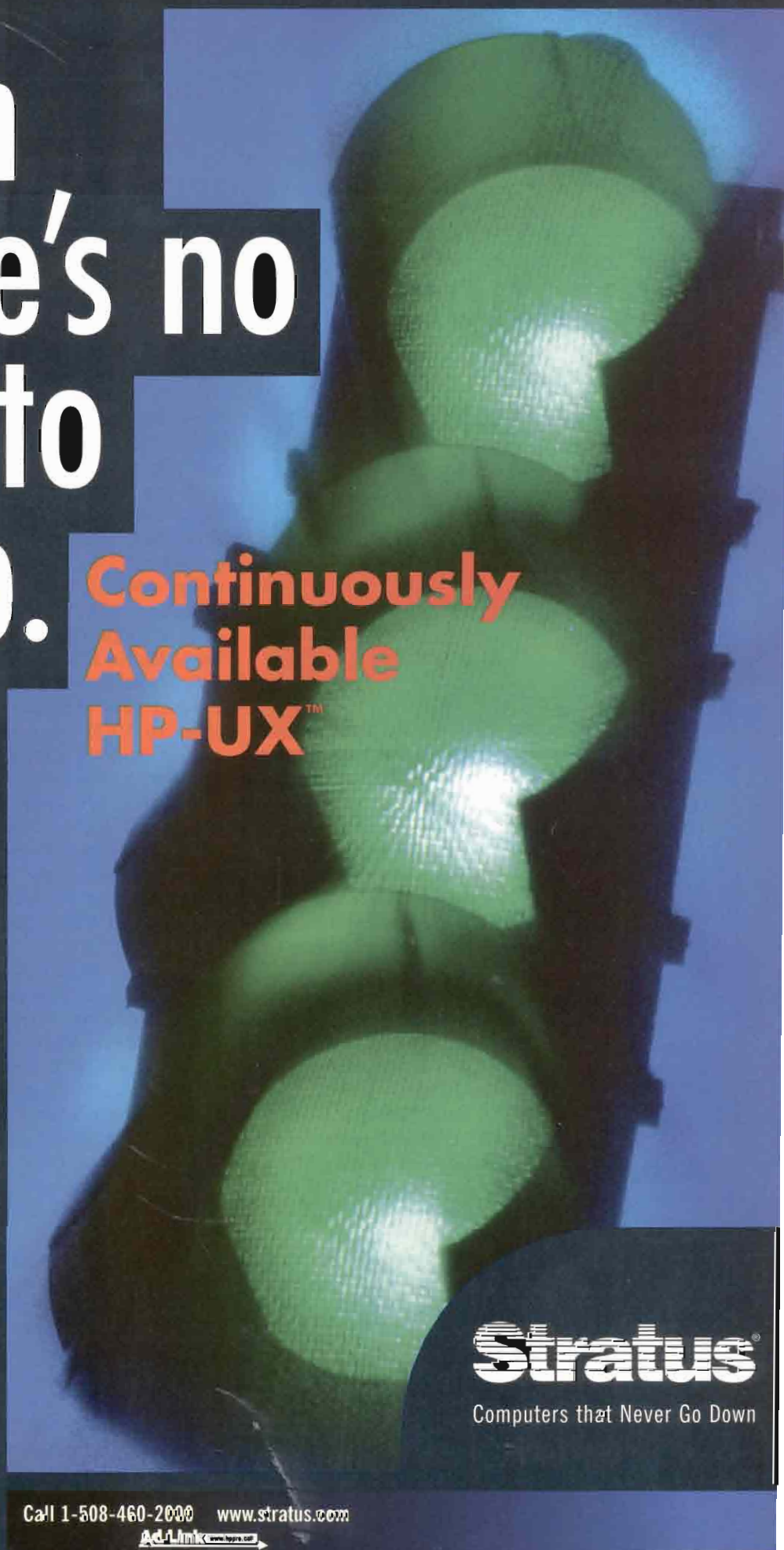

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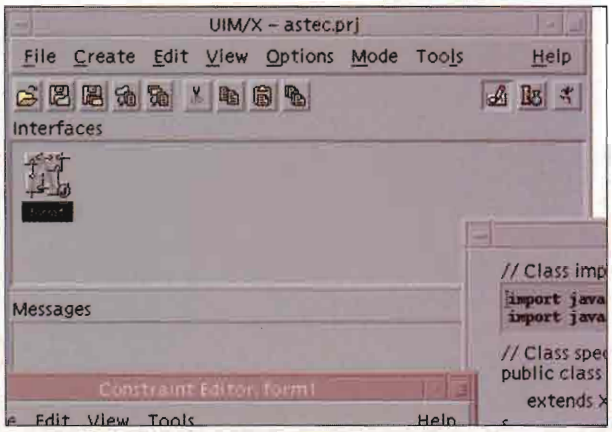

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Migrating a legacy application to a new platform may not always mean just changing back-end code and data bases. Users will still need a new interface as a way to get access.

To make that possible, Visual Edge Software (St. Laurent, Quebec, Can.) has released a major new version of their UIM/X 3.0 Platinum Toolsuite Edition (PTE) which provides a migration of existing Motif interfaces to either 100 percent pure Java or Windows NT.

PTE is an add-on to their UIM/X, a graphical user interface builder for CDE/Motif. Calling it a "platform independent user interface management" product, Visual Edge's director of sales Eric Rubin says "it helps customers preserve their legacy code and still broaden their reach to new platforms."

Along with converting legacy code, UIM/X PTE lets developers "write once, run anywhere" by creating either Motif, Java or Windows NT interfaces from a single source code base. Rubin says that, to date, customers using the product have been divided close to 50/50 along the lines of migrating existing and creating new interfaces.

Rubin adds that the migration of legacy code is a two step process — the actual conversion of the old, then refinement of the new code — and PTE "covers both aspects."

The conversion is a "step-through" process using Migration Assistant and Refinement Technology (MART), a "UNIX version of Wizard technology." It can accomplish Motif to Java, Motif to Windows or Windows to Java. Once converted, the same tool lets developers refine their code on the new platform.

Asked to compare UIM/X PTE to the competition, Ruben cites X-Designer from Imperial Software Technology (Reading, U.K.). "Most others are positioned as screen scrapers. We are a true C, C++ interpreter." He adds that Visual Edge, with 13 years corporate experience and nine years with UIM/X on the market, has the most mature technology.

And he says that Visual Edge is the first company to see the market for UIM/X PTE as more of a migration market than a development market. That has forced an emphasis on helping developers to maintain old code rather than start over.

Apparently this strategy has been well received since there are a number of prepackaged UIM/X integrations and application-specific solutions available. Companies like Bluestone, Inc. (Mt. Laurel, N.J.), Black and White Software (Campbell, Calif.), Advanced Visual Systems (Waltham, Mass.), SL Corporation (Corte Madera, Calif.), Data Views Corporation (Northampton, Mass.) and Bristol Technologies (Ridgefield, Conn.) have produced UIM/X applications that range from document management to RDBMS utilities to PostScript and PCL software libraries.

UIM/X PTE is priced at $2,500 as an add-on to UIM/X, or $7,500 for the complete system.

Ken Deats,
Associate Editor

The Responsiveness of BCS: Part of the Solution

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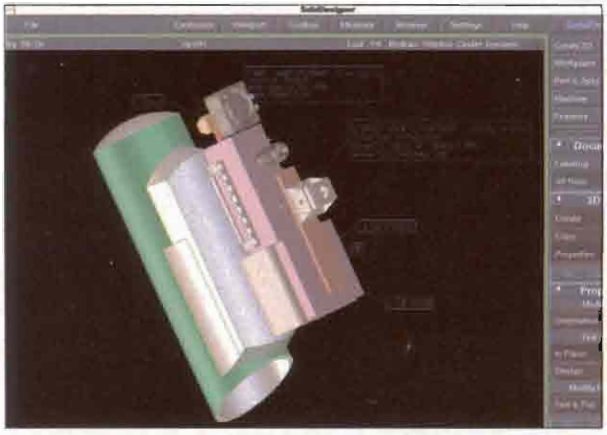

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The process of transforming a pure thought or idea into a real-life, solid product can take time, many iterations and, if you're working in a team, a lot of give and take of both data, concepts and virtual models to arrive at a working prototype.

Until now, team-work on an industrial design project has been, at best, cumbersome since working on and modifying legacy models from disparate design software sources was nearly impossible. CoCreate Software's (Fort Collins, Colo.) new Solid Designer 6.0 plans to change that with the addition of their Extended Dynamic Modeling (DMOX) feature, new to this release.

DMOX makes it "easy to bring in legacy 3-D data and continue to make changes to frozen design data once it is imported," says Geoff Hedges, CoCreate's product manager for Solid Designer. He adds that this capability has been thoroughly tested for models imported from other popular design tools like Pro Engineer, Unigraphics and Catia.

Intertwined with that ability are benefits derived from intelligent blend recognition, a process that recognizes tangency conditions in imported data, records those relationships and allows for automatic updating.

Hedges contends that while other design packages import model data, their use of "very proprietary technology doesn't allow them to drive change," forcing the imported model to be frozen.

Hedges touts several other new features in Solid Designer 6.0 like Model Advisor which allows for the setting of thresholds that warn when a component that could never be manufactured — such as an edge less than one-thousandth of an inch — is attempted.

The Design Information module enables designers to attach and share non-geometric information like design and manufacturing notes, tolerancing data and secured Internet hyperlinks directly to their 3-D models.

Kurt Botsai, a senior designer at RKS Design (Thousand Oaks, Calif.), a product design and development firm, talks about using Solid Designer on the design of a new headset. "It was extremely valuable. The project was on-time and budget."

"The blend recognition is great," he adds, commenting on how he turned a curved surface imported from Pro Engineer into a blend. To RKS designers, the biggest advantage to be realized from that feature was speed. "We did in two hours what it may have taken all day to do in Pro Engineer," he says.

Botsai said that better rendering and tapering capabilities and a pull-down box for standard components like screws with standard threads, lengths and head shapes would be the only changes he might want to add in future releases.

Overall, he says, Solid Designer "has gone from an engineering tool to a true design tool [that they] used through the whole project."

Ken Deats,
Associate Editor

Year 2000:

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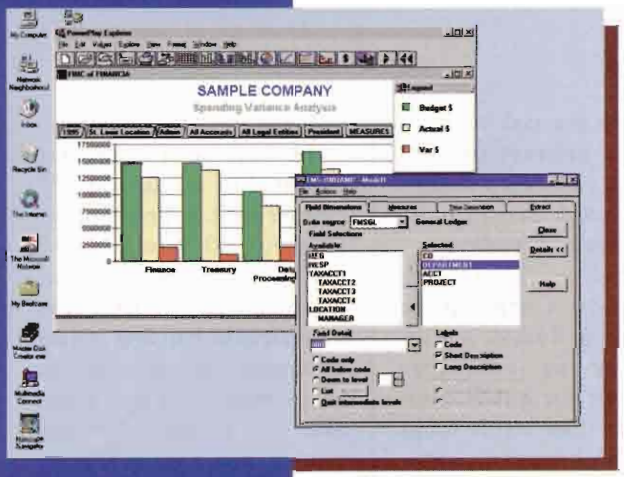

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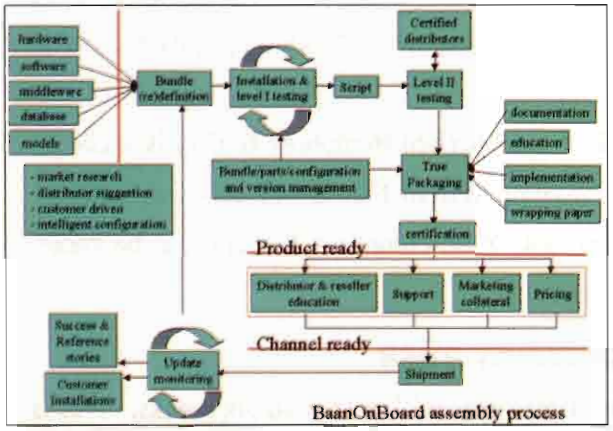

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One of the biggest stumbling blocks that keep small-to-medium businesses from realizing a comprehensive ERP solution is the cost and complexity of designing and customizing a satisfactory implementation.

Baan USA Inc. (Reston, Va.) wants to kick that block out of the way with Baan-on-Board (BOB), a set of comprehensive applications that are pre-integrated as ready-to-run solutions that include BaanERP and industry templates.

Baan's marketing philosophy for BOB is to bring "together all of the resources necessary for small and medium-sized customers to implement world class enterprise solutions." To that end they have created the Baan Midmarket Solution group and charged them with the task of managing the delivery of BOB through a two-tiered distribution network that includes distributors and resellers.

Digital Computer Integration Corporation (DCI; Plano, Texas), a manufacturer of computer equipment for harsh environments (like inside tanks and amphibious vehicles), had outgrown their legacy "glorified accounting system," says Darin Dannelly, DCI's manager of software business development. "It wasn't Y2K compliant and a lot was being done manually — in people's heads."

The prospect of implementing a new system from the ground up presented "a price tag we wouldn't have been able to swallow," says Dannelly. So, DCI turned to BOB. "When our executives saw Baan, they saw lots more the system could be doing for them."

The implementation started with a three to four page questionnaire from Baan to facilitate the configuration done by Integration Alliance (IA;Englewood, Colo.), the implementation provider. The turnaround from questions to a working system, according to Dannelly, was "a couple of weeks."

The original estimation of a full ERP implementation was five to six months.

IA built a system that consisted of a four-way HP NetServer LX Pro configured for 20 Windows 95 users. The particular template chosen for DCI was the machine building industry model, the one closest to DCI's needs that was available at the time. "It had complexities built-in that we didn't need," says Dannelly. Baan has since developed a variety of more specific templates and, if they were starting now, DCI would have a more appropriate choice.

"There's functionality...in the application just sitting there," he says. "As we grow and become more complex, it's waiting for us to catch up with it."

Dannelly was impressed with how close the pre-configured platform met DCI's needs. "We tweaked the database for performance issues, but you can do that into infinity," he says. "The hardware is rock solid. It just sits there and runs. This may be the last ERP package we're ever going to have to implement."

Pricing and configuration is specific to each particular installation.

Ken Deats,
Associate Editor

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Staking Your CLaiMS On Sales Leads

Is Marketing Intelligence An Oxymoron?

SALES PEOPLE LEARNED long ago that "leads" from the Marketing Department are often a waste of time. Management is left in the dark as to the effectiveness of their marketing investments. Which marketing events ultimately produce the most revenue? How can we improve our marketing and sales processes?

Matt Jacobson

Marketing invests in campaigns to generate leads, the leads are inconsistently and often informally distributed and nobody really knows what the sales force does with the leads. Marketing is left to focus on metrics for interim results like the number of seminar attendees and anecdotal evidence — "Bob in Sales said, 'five are hot leads.'"

HUNGER FOR FEEDBACK

The underlying reason for the broken process is a lack of feedback loops. Total Quality Management (TQM) principles have taught us the necessity of gathering and incorporating feedback into our production efforts. The challenge is to build a series of feedback loops into the Marketing and Sales processes to provide comprehensive, end-to-end feedback on the process.

Since 1994, HP has used the Closed-Loop Marketing System (CLMS) from Melillo Consulting, Inc. (Somerset, N.J.), to facilitate ROI measurements for its marketing investments. According to Clark Straw, general manager, Worldwide Solutions Reseller Organization at Hewlett-Packard, "Melillo delivered great value to HP with CLMS. [Their team] invested the time to understand our business and consistently provided rapid solutions to meet our evolving business processes."

When a marketing event is initiated, campaign information is recorded in CLMS and, as leads are entered into the system, they are associated with the corresponding event. HP uses a set of tele-marketing organizations and CLMS receives data feeds from them. CLMS retains the detailed notes taken by the tele-marketers and interfaces with HP's internal systems for the latest sales force territory assignments.

LEAD ON

With a large sales organization selling a variety of product lines, determining the right sales person may involve rules for company size, geography, application, vertical industry or location of the company's headquarters. Using its flexible distribution rules engine, CLMS determines which sales representative or HP Channel Partner should receive the lead and sends an e-mail to that representative. The e-mail provides a hot-link to the CLMS Web site on HP's intranet which provides the representative with contact information and detailed notes.

Getting the lead to the right representative is important, but only part of the battle — gathering feedback is the next effort. Whenever a sales organization is involved, the challenge system designers face is to make the user interface as efficient and friendly as possible. When the sales force becomes frustrated enough to start asking their management —"Do you want me to spend my time wrestling with this system or with customers?"— usage and, therefore, value of the system will steadily decline.

The CLMS user interface has evolved through the years and features a very dense, efficient set of screens that minimize the number of clicks and typing required. Check lists and pull-down menus enable sales people to rapidly record opportunity details, forecast potential revenue, specify target dates, update the customer profile and capture competitive information.

CLMS provides a variety of reports that support the different user groups on the system. Sales managers gain visibility into their team's sales funnel with reports on unactioned leads, key deals with the largest rev-

enue potential and revenue forecasts. Marketing personnel have reports that track leads associated with a marketing event all the way through the sales cycle — from raw lead counts to actual revenue. Not only can Marketing compare a marketing investment to the actual revenue generated, but they can also use CLMS to study competitive results, time-to-closure on product lines and perform analyses of customer buyer trends.

CLMS started as a fax-based system with Melillo Consulting handling the data entry and operations of the centralized database. Next came a fat e-mail client approach with attachments mailed back and forth. Today, CLMS is a Web-based solution running on an HP Net Server with Microsoft's Windows NT Server, Internet Information Server and SQL Server.

CLMS has been deployed to over 500 users at HP with Melillo personnel providing the day-to-day operational support, database and system administration. The success of the system is due to the responsibility that Melillo Consulting has demonstrated in developing the CLMS software as well as the support it offers to HP's business processes and organization.◆

— Matt Jacobson is the director of software development at Melillo Consulting and leads a software development team specializing in electronic commerce and Internet development projects.

WHAT ABOUT CLMS AND ROI?

Even in the older technology stages, there were immediate, strong returns with the CLMS system. Based on the number of attendees, HP was planning to invest in a number of seminar events but with CLMS providing end-to-end process visibility, they discovered that although the attendance was strong, the results in the sales funnel and ultimate revenues were poor. With that insightful information, HP redirected their marketing investments away from the seminar program.

HP received another payoff by learning that 81 percent of the qualified leads provided by telemarketing to the sales force were rejected as non-leads. Using CLMS to provide regular, structured feedback, HP has improved the productivity of their telemarketing efforts so that less than 5 percent of the leads are rejected. Now, with close to four years of HP marketing and sales history in its database, the CLMS solution has withstood the test of time and delivers the information to make business decisions for marketing investments.

-M.J.

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Proactive IT Management

PG&E Keeps Network's Power Flowing

THE SAFE, DEPENDABLE delivery of electric power — nowhere is the reliability of mission-critical IT applications more important. Unprocessed work orders mean energy restorations to hospitals may be delayed. Just as important are call center operations, back office, accounting and customer service applications.

Deborah Radcliffe

All network managers know there's no such thing as 100 percent up-time. That's why Joe Soldevila, automation project manager at Pacific Gas and Electric Company (PG&E; San Francisco, Calif.) makes proactive IT management his top priority. To achieve high network and application availability, Soldevila and a team of automation specialists are tightly integrating Boole & Babbage's MAX/Enterprise event management console with connections to HP OpenView's network management framework, Boole & Babbage's MainView OS/390 performance and automation products, SYMON visual Communications System and a number of other existing management tools.

Acting as the glue between them, MAX/Enterprise takes network event information from these disparate management applications, correlates alarms and in some cases inspects problems on a deeper level. Then it sends detailed alarm information to the appropriate technicians, help desk personnel or clients through phones, pagers, SYMON boards, or a customized MAX/Enterprise client workstation view. "We've engineered a solution with MAX/E that allows us to access all of our alarm systems and automation products easily through a standardized mechanism," says Soldevila.

In this unique configuration, the Boole & Babbage event management console not only acts as a liaison between HP OpenView and other network management and automation tools, it also automates help tickets in Remedy's Action Request System (ARS). Most importantly, it alerts help desk and support staff about major problems before users light up switchboards with pleas for help. "We have taken systems that spew thousands of messages a day and consolidated them into a single repository where each message is evaluated, prioritized and processed according to its impact on our business," he adds.

SYMON SAYS

Big ticket events are sent directly to four-foot SYMON boards hanging on highly visible walls in several help desk offices and key business units at ten critical remote locations. The SYMON boards scroll event information in red letters when something significant occurs that affects the client. This way, support staff is ready with critical information — cause of problem, time-to-repair and exactly who will be impacted — before users even

know an event has occurred. In many cases, this early warning system gives ample reaction time to divert traffic or call end users to inform them of the problem.

When Soldevila began searching for an event management console two years ago, he focused on several key business goals. First, he needed to consolidate a number of disparate systems and have the flexibility to deal with each alarm differently depending on its impact to the organization. The solution also needed to give operations' minimal staff the ability to empower end users, automate trouble tickets and be powerful and open enough to integrate with other solutions like HP OpenView. This was necessary to manage a variety of networking devices, integrate into other network and systems management frameworks, significantly raise the level of service and view problems in broader terms of application availability.

For example, mainframe monitoring, which previously sent out volumes of messages to operators, now requires little human intervention. When it does, it combines MAX/Enterprise with Boole's PhonePoint product to page or call the appropriate person from PG&E's technical support staff, most of whom work remotely.

Most importantly, says Soldevila, the service level has improved significantly. "We now provide customers with the level of availability and outage notification they require to do their jobs more effectively. With this infrastructure in place, we have the ability to — and plan on — migrating in other critical applications and any new systems, applications and network components that require this level of availability and automated notification."

Company: PG&E Corporation (San Francisco, Calif.) serving nearly 14 million California energy consumers.

Size: $30 billion in assets and five business units.

Business Need: To integrate a number of disparate operations/network management applications to work together and look and feel like one while reducing costs and improving critical application availability with a minimal help desk and technical support staff.

IT Solution: Boole & Babbage MAX/Enterprise event management console integrated with HP Openview, Bay Networks Optivity, Remedy ARS, SYMON Visual Communications system, Boole & Babbage Mainview and PhonePoint, EPAGE, and Exchange.

Microwaving Rules

Network Specialist, Kathy Purvis says her department appreciates the clearer, earlier notification. "The system alerted us to a problem about to impact a large portion of our users. MAX/E pointed us to a repairman working on the microwave network." With the help of a Boole professional services consultant, Purvis took a half-day to write a custom rule-set that correlates SNMP events through HP OpenView.

The automation project has moved forward in stages, with each phase bringing more sophistication and efficiency to PG&E's mainframe operations, network management and help desk departments. The next step is to take the alarm information and the automation tools and deliver them directly to those who need it most — end users, remote support and remote management personnel.

Some of this has already been accomplished with SYMON boards placed in key business units. Soldevila hopes to expand PhonePoint's dial-in self help to give users the ability to perform some common help desk requests, like resetting passwords and IDs, checking system status and triggering automated events over the phone.

Before the integration, PG&E's help desks ran like so many others in large corporations. During system, application and network outages, they operated in crisis mode. Help desk staff was flooded with calls for assistance, but they had no way of pinpointing problems or estimating fix times. Often, they were so overworked they couldn't even return calls to users to let them know when the system would be up again.

High And Dry

"[Automating helps] to keep costs down and our critical systems up. It keeps [us] from growing our help desk staff every time our responsibility increases. So far, MAX/E has integrated smoothly into any environment we've wanted it to," says Soldevila. The implementation of MAX/Enterprise has helped PG&E accomplish all of their IT goals including user "self-help" applications. Now, working from one central office in Fairfield, second-tier support/help desk staff is no longer flooded with calls. "If we cannot provide a level of service adequate to meet our clients' needs, they can go elsewhere and unfortunately, some of them did." Efficiency is up and human intervention is down.

Soldevila's implementation, along with several other organizational and process changes, has brought some order to the help desk. No small task, considering PG&E consists of 20,700 employees working in five business units. "We are freeing up resources from daily fire fighting. Service levels are being met and client expectations are getting higher. Our systems are driving more transactions than ever before and the availability and performance are at all time highs. Most importantly, users and senior level management are confident in our ability to get the job done." ◆

Indirectly Yours

HP's Indirect Sales Channel Partners Come to Terms

As competition squeezes profit margins from sales of computing hardware, HP is pushing out more high-end business to distributors — and eventually to resellers and system integrators — as a means of generating more business and reaching broader markets while holding the line on expenses.

Increasingly, as HP fine-tunes its channel strategies, the company is beginning to go beyond a standard accounting of revenues as a measure of success and is looking critically at the return on investment statements of their partners, says Randall J. Katchis, president, DIS Research Inc.(New York, N.Y.) a technology consulting firm that specializes in application development, integrated document management, electronic commerce, enterprise management and systems integration and is a HP *Best in Class* partner.

Over the past two years, HP has been requiring that partners spend the resources necessary to deliver optimal service and product knowledge to vital corporate buyers. "The demands it puts on the value-added-reseller are significant," says Katchis, whose company also resells HP 9000s and HP-UX. "It's going to effectively determine who the players are moving forward." But those demands, which typically focus on adding greater value, can also pay off for the reseller.

Mark Melillo, president of Melillo Consulting Inc. (Somerset, N.J.), a reseller and systems integrator, believes HP is looking to reward its top selling *Best in Class* partners by giving them an additional designation. "One of the things they're trying to do is separate the masses from those resellers that are really providing the value-add that HP wants," he says. "In doing that, partners who do a lot of consulting and who really bring a solution [to the table] are

Marvin V. Greene

going to play a part in that model."

Katchis thinks, "It's very clear that HP is quickly getting to a model where they're going to require their partners to be larger in scope, both from a services standpoint, a support standpoint and a geographical standpoint, thereby limiting the number of players they have to interface with." "They want to drive their leverage model higher and reduce their costs, as well as requiring the specific VAR to have a return on investment."

HP's focus on the indirect channel is not accidental. IDC predicts that worldwide indirect channel server revenues, for instance, will exceed $42.5 billion by 2001, a compound annual growth rate of 16.7 percent from 1996 — growth that is almost twice that of the overall server market. In a report released earlier this year, IDC found that while worldwide indirect channels are showing strong growth, direct server revenues are growing modestly. The company estimates direct server revenues will reach $50.5 billion in 2001, but will grow at only a 4.2 percent compound annual rate.

-M.G.

ONE TO TWO PUNCH

Eric Johnson, vice president, professional services at Bloomfield Computer Systems Corp. (Bloomfield Hills, Mich.), a HP reseller since 1992 and one of their largest, explains that HP's two-tier channel strategy no longer allows them to buy direct. "But, we're getting involved with HP and HP sales teams on much larger accounts." That opens up other kinds of opportunities. "They're moving many of the larger accounts to indirect as opposed to direct relationships. The types of companies we are selling to are certainly larger than the mid-market firms that we previously had very strong relationships with."

As you might expect, change has not been uniformly smooth. "We used to get [a] phenomenal [amount of] attention" from HP direct, says Tim Powers, marketing manager for ROI Systems Inc. (Minneapolis, Minn.), a HP reseller. In 1997, ROI Systems, which did about $2 million in HP business annually, lost its direct connection and was forced to buy through a distributor, according to Powers. Powers says the change in the

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relationship with HP was apparent as they re-targeted the amount of annual revenue resellers had to generate in order to deal direct, a bottom line today that starts upward of $5 million. While the company's revenues didn't suffer, quality of service and level of service did during the switch over.

"We always bought from HP and that's what we expect." Nonetheless, ROI Systems understands the need for change. "As the markets continues to get tighter and tighter, and that problem escalates on a downward spiral for hardware vendors, they just can't afford to put the direct resources into them," Powers says. "We had a dedicated sales person being paid a lot of money to generate a couple of million dollars in retail revenues. They needed to move that business out to distributors to avoid those internal costs. I understand from a business standpoint why that needed to be done." But he adds, "the catch is" that distributors also are trying to cut costs because of shrinking margins, "so they want to put the least amount of resources in a sale as they can."

Expanding Distribution

Patrick Hopkins, managing director of Omicron Systems Inc. (Philadelphia, Penna.) which resells HP hardware as a *Best in Class* Channel Partner, says partners must adjust by understanding that what HP is trying to achieve is a customer-centric sales infrastructure. "The customer expectations of Channel Partners are different than the customer expectations of HP direct sales," says Hopkins, who worked 14 years in sales at HP for large and mid-market accounts before founding Omicron Systems. "What we do is have an optimal blending of the two, and we complement that with our product knowledge and our ability to deliver the full set of services if required by the customer."

Hopkins says as he saw the HP indirect channel model taking shape, he configured his hardware sales organization from the base of offering total services. "HP has a good plan of not just looking independently at the customer, the integrator or the reseller," he says. "HP looks at all of that as a whole. They essentially have good relationships with their Best in Class Channel Partners." HP distributors, with more responsibility to move product through the channel, are being asked to recruit and expand vendor channel programs, while the manufacturer focuses on programs to generate demand.

HP partners estimate that the vendors are putting more than 50 percent of product into the channel today, compared with 25 to 30 percent less than two years ago.

The result is consolidation among distributors, says Charlie McPherson, vice president for marketing for Scientific and Business Minicomputers, Inc. (SBM; Atlanta, Ga.). As evidence, SBM was acquired in May 1998 by Gates/Arrow Distributing, (Greenville, S.C.), a subsidiary of Arrow Electronics, Inc., (Melville, N.Y.). "Gates/Arrow Distributing will fold all of its HP business into SBM," says McPherson, who expects the logistics of the merger to be completed by year end.

Gates/Arrow sought the acquisition as a means of enhancing their position in the high-end enterprise computing marketplace to handle HP 9000 business, says Mike Long, Gates/Arrow president. Harper Thorpe, HP's U.S. distribution and reseller manager, notes that the joining of SBM and Gates/Arrow creates "an exciting value proposition for us and our resellers."

McPherson, soon to be vice president of new business development at SBM, says the deal also is evidence of HP's preference to rely on fewer distributors for their HP 9000 business. He says when SBM became a HP 9000 distributor in 1993, eight or nine distributors were moving the product, but now that number has been cut in half. "You're seeing a lot of consolidation in the distributor ranks," McPherson says. "All of the big companies continue to be on an acquiring frenzy. That's brought about by a number of reasons. One is the terrific opportunity there. The whole marketplace for resellers and distributors has grown dramatically."

NT Changes The Dynamics

The demand among end-users for low-end Windows NT systems and workstations is also creating new dynamics in the relationship between distributors and resellers. For example, SBM recently added an NT line.

Industry research firm International Data Corp. (IDC) figures that while by the year 2001, revenues from direct UNIX sales will be seven times greater than NT sales, NT growth worldwide will achieve compound annual growth of 38 percent from 1996 to 2001. Indirect channels will account for 88 percent of all NT shipments by 2001.

"More and more customers are purchasing HP systems, both UNIX systems and NT systems, through the channel," says Omicron's Hopkins. "As far as the integrators and distributors are concerned, their linkage as a team effectively will be an important factor in customer satisfaction." On the other hand, Nilesh Desai, senior technical architect for Claremont Technology Group Inc. (Basking Ridge, N.J.), says integrator companies like his are awaiting signals from HP as to how vigorously they will pursue NT business. While HP's 9000 systems have price points in the hundreds of thousands of dollars, enter-

prise customers are increasingly favoring NT for its cost in the tens of thousand of dollars.

Melillo, of Melillo Consulting, thinks that what still needs to be worked out at HP between UNIX and NT is the value versus the volume model. He believes HP won't ignore the volume side of the equation. "Clearly there will be a volume model in the future," Melillo says. With the volume model, "value does not have a lot of impact in the sale." The questions are, "Can you get the stuff?, how quickly? and at what price?" Claremont Technology Group, in order to ramp up their options in the NT space, bought a pure Windows NT company, Desai says.

Setting Up Camps

Claremont Technology Group builds software applications for billing systems, and with NT those are now attractive to small companies with $50 million to $100 million in revenues. There are two camps within HP over UNIX and NT, according to Desai. "So how are they going to differentiate and how we are going to take advantage of what they offer?" Going forward, HP's partners want the vendor to continue to involve them in business opportunities — the earlier, the better. Partners are also asking for clear direction and communications.

"I have seen HP make continued commitments to the channel," says SBM's McPherson. "In the early days, I think distributors and resellers heard a lot of words, but didn't see a lot of action. HP has done a very good job of ingraining the importance of the two-tier channel throughout their organization." Katchis of DIS Research says HP put out a very strong message several years ago — both from a compensation standpoint and from a management standpoint — that they are going to build and increase the amount of business the channel does.

"To have a good channel [program], the partners have to be viewed as being an integral part of the team," Katchis says. "We have to become an active part of the overall P&L of HP. And HP, [now] really has to rely and almost assess quota to the channel. HP also has to very tightly integrate our technical and selling organizations into their technical and selling organizations, so that we are all singing from the same hymnal. That's very important when you're interfacing with corporate buyers."

— Marvin V. Greene is a writer with the Washington News Bureau.

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Complexities Of Cluster Backups

Microsoft's Clustering Service Raises New Questions

Jeff DiCorpo,
HP R&D Project Manager, Storage Systems Division

With the increasing deployment of Microsoft Windows NT Server Enterprise Edition, server clustering is becoming popular as a means to achieve high-availability without the expense of deploying fault-tolerant redundant systems. The clustered approach differs from redundancy in that, with clustering, secondary servers — known as "nodes" in a clustered environment — are in use performing their primary tasks, like providing e-mail or Web access services. Redundant systems simply mirror the functions of the primary server and perform no additional tasks. Clusters are classified as *highly available* with an average up-time of about 99 percent. Redundant systems are classified as *fault tolerant* with 100 percent up-time under all but the most cataclysmic circumstances.

Given the high costs of redundant systems, many network architects are opting for Microsoft's clustering architecture and its promise of near-continuous availability. Running on Windows NT Server, Microsoft's Clustering Service software provides the framework for determining how the cluster will handle the failure of any components.

IMPLICATIONS FOR DATA PROTECTION

While it may reduce the cost of building highly available systems, clustering magnifies the complexity of backup and recovery. In a clustered environment, the two standard backup methods — backing up over the network or to a directly attached device — are either impractical or inadequate when safeguarding all information in a cluster. While backup of smaller amounts of data can be conducted over the network, standard networks are inadequate for larger backups. To achieve acceptable performance on large data sets, a network administrator must back up the cluster's physical nodes to a direct-attached tape system. But this approach presents its own set of problems.

Clustered applications are packaged as "groups." Included in a group is the virtual server name for the application, which lets a given application run on different systems at any given moment. To get a complete system image containing all the information needed to rebuild the cluster, each physical node must be backed up, not just the virtual nodes that represent the application groups.

Because clusters are inherently dynamic, responsibility for managing data and applications moves from server to server as needed to keep the system running. Such shifting of responsibility is called "failover" — and failovers cause uncertainty in backups. A physical node's configuration can change depending on where the virtual node resides. Therefore, an application could execute on one system at the time of backup and on another at the time of restoration. Unless the configuration of the physical nodes during backup is identical to configuration during restoration, inconsistencies may arise which make it impossible to guarantee that all critical data is recoverable.

Solutions for protecting clustered data are still evolving. By the year 2000, though, the puzzle pieces should be in place. For networks with smaller storage requirements, over-the-network backup is still the best option. Enterprise environments with large storage requirements, however, should consider directly attached tape backup devices for each node, since over-the-network backup in these sites consumes an unacceptable percentage of bandwidth.

In this scenario, each server in the cluster has its own tape backup system. Administrators can manually back up

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Good Backups Don't SAP ERP Solutions

Enterprise Resource Planning (ERP) systems provide dramatic reductions in manufacturing costs, improved time-to-market and more responsive customer support. To accomplish those business goals, the ERP system itself must provide smooth, unfettered information flows across multiple departments or very often, multiple sites. Because the ERP database becomes the single repository of virtually all the organization's information, keeping that information backed up, secure and available on demand becomes an administrator's challenge, or his or her worst nightmare.

A good backup solution is as essential to the corporate IT infrastructure as the ERP system itself. Geneva Steel (Vineyard, Utah), a $700 million steel mill is in the midst of an enterprise-wide SAP R/3 implementation. Ned Hanks, Geneva Steel's Network/Systems Administrator, was given the task of searching for a backup solution for the SAP project. He chose Backup Express from Syncsort Inc. (Woodcliff Lake, N.J.), an SAP-certified database backup product.

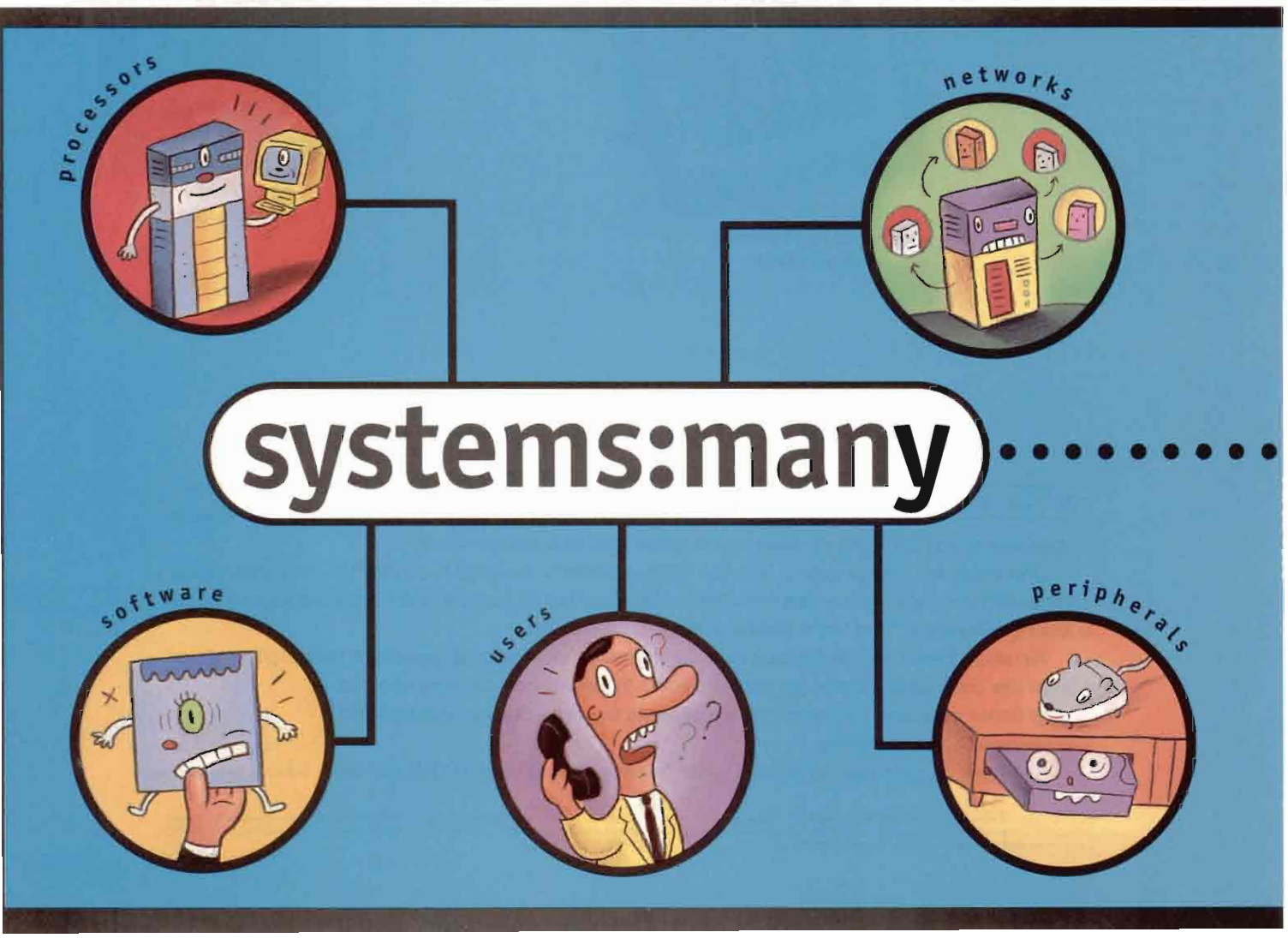
Keeping The SAP Flowing

Hanks' SAP environment includes four HP 9000 servers running HP-UX and a mixed bag of clients running HP-UX, Windows NT, NetWare and Windows 95. In addition to the SAP system, Hanks also manages 16 HP 9000s, three Windows NT systems and one NetWare system. This heterogeneous environment required a backup product with multi-platform support capabilities.

"Backup Express was the best choice for all these different systems," says Hanks. "But a critical requirement for us was SAP support. We wanted a seamless, tested backup solution that would take a minimum of interaction from the administration staff once it was set up." Hanks was extremely pleased at how fast and easy installing Backup Express was. "The product is so easy to use, particularly to install and set up," he says. "And by consolidating all our backups to a single tape library managed by Backup Express, we can deploy a true 'lights-out' strategy for our R/3 backups."

For backing up enterprise systems, performance is also a primary concern. "When you have an entire company accessing a single, enterprise-wide system like SAP R/3, you need superior performance," Hanks says. "Backup Express offers 'hot' database backup, along with partition splitting and dynamic parallelism capabilities. These features make SAP backups run faster, maximizes storage space, and make my job much easier."

Ira Goodman, Software Services Manager, Syncsort, Inc.



each node in the cluster, but the backup applications don't know that the node is part of a cluster. Directly attached tape backup devices are only capable of taking a snapshot of the cluster at the time of backup; they don't automatically adapt to changes in cluster configuration caused by events like failovers.

Very soon, most software that runs tape backup systems should become "cluster-aware."

Very soon, most software that runs tape backup systems should become "cluster-aware." This means that backup software understands the dynamics of the clustered environment and makes calls into the cluster to determine where data resides and how to back it up. If restoration is needed, cluster-aware backup applications understand how to interrogate the cluster to determine storage configuration and the proper order in which to restore the various elements to maintain consistency.

The next step is the intelligent use of direct-attached backup devices. Choosing among the pool of tape devices attached to the physical nodes in a cluster, the application dynamically specifies the proper tape device at time of backup and tells the device to back up designated files, directories or applications.

The tape backup application, because it has kept track of clustered activity, knows exactly where the relevant data is located. This scenario provides automatically optimized backup, doesn't saturate the production network and frees IS staff from manual intervention in cluster backup operations.

Within the next year, the most cost-effective and efficient cluster backup solution will be achieved by building on prior developments — cluster-aware backup software and intelligent direct-attached backup devices — to allow the cluster to share a single backup device, like a tape library or tape autoloader. And while such a connection could be achieved over an existing technology like SCSI, future clustered servers are likely to be attached to each other, and to shared storage and backup devices on a separate storage area network, or SAN, using Fibre Channel technology.

With the advent of efficient, affordable SAN technologies and cluster-optimized backup control software, network planners will finally be able to take advantage of the best of both worlds — clustered servers backing up to a single, network-attached DLT or tape library system.◆

Can't we all get along? Multiple computer systems, peripherals and software packages. Add to that LAN and WAN connections, Internet support and increasing numbers of demanding users. Throw in a problem or two, which needs several vendors to solve. And you've got a good picture of the demands on today's midrange IS manager.

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A Universe Of Information

Storage That's Out Of This World

Michele Shull, President, Electric Image, Inc.

Are we alone in the universe? What does the surface of Venus look like? How many rings are actually around Saturn and Uranus? The mysteries of the universe intrigue us all. At the Jet Propulsion Laboratory (JPL; Pasadena, Calif.), their goal is to bring answers to our many questions and to make the answers available to anyone, anywhere.

On-Board The Enterprise Storage

But when the JPL set out to use its Planetary Data System to share the knowledge gained from the many NASA space missions, it was left with a question. How could the galaxies of information gathered on these missions of exploration be disseminated? With an audience of schools, public libraries, scientists and the general public, the JPL was faced with a significant challenge, one that could not be solved by its own stellar technology.

Before 1985, the only option for sending out the massive amounts of photos and information was tape storage. But the limitations of tapes were great. Tapes could not be read after one year. The users didn't have access to the expensive tape drives needed to read the information. There was no standard file format which could be used on the tapes, making it difficult to distribute to the various operating systems.

In minutes, anyone from China to Connecticut can download a picture of the surface of Venus.

That year, however, an enabling technology was found to meet these challenges — CD ROM. As the Voyager mission blasted off, JPL prepared to store the many images it expected to receive from the mission. However, a significant development in satellite technology in 1990 allowed the mission spacecraft to send back even more information to Earth. On the Magellan mission alone, over 500 CD titles mapping the surface of Venus were published. To try to store this amount of data on tape would have been cost prohibitive. Still, CD-ROM has its limitations.

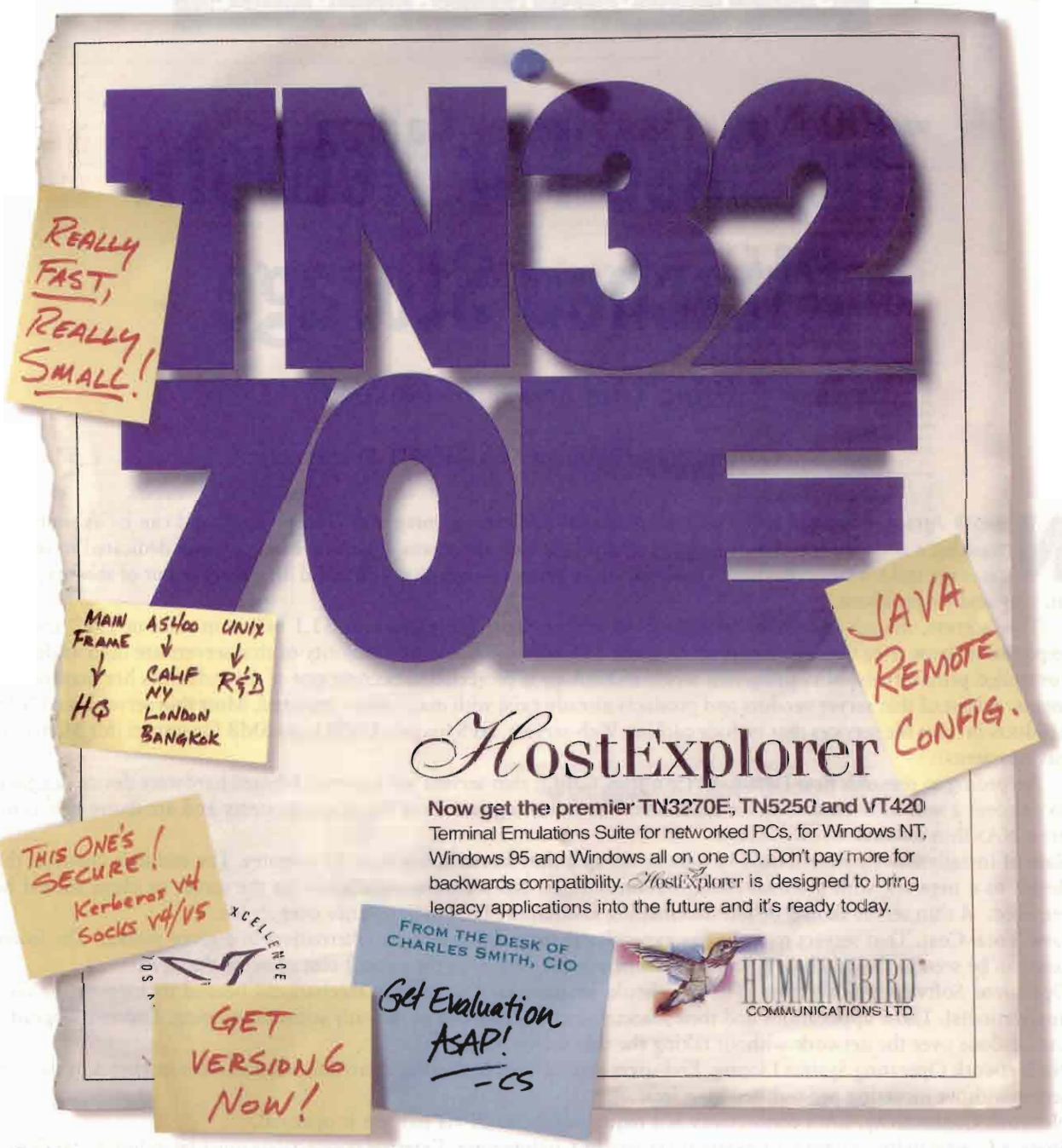
Jupiter In A Jukebox?

With CD Jukebox technology from Tracer Technologies (Gaithersburg, Md.), JPL is able to better perform a critical function — providing information to the world about space. Images are standardized so that any platform can access the data. And by leveraging the rapid acceptance of the Internet, public access to this information has increased tremendously. JPL is able to offer a CD catalog of all of its missions via their Web site. In minutes, anyone from China to Connecticut can download a picture of the surface of Venus.

"We are constantly pursuing technologies to support our meeting the goal of unlocking the universe. There are questions that everyone has," said Jason Hyon from JPL. "With a given technology at a given time, we can take more steps toward our goal. We are continuously improving our technology and modifying our theories, hoping to ultimately answer the questions of our universe."

With the help of JPL, everyone, from school children compiling reports for classes to *X-Files* fans trying to confirm their theories of extraterrestrial conspiracy, can download images that were once only available to only a few scientists. ◆

To an IT manager, this is a pin-up.



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The Case For Network Attached Storage

Using Thin Server Technology

Scott Harlin, Public Relations Manager, ATL Products, Inc.

Network Attached Storage (NAS) is a solution that addresses a company's storage needs and can be as simple as attaching a computer with a disk to the network. If only there was a painless NAS solution dedicated to specific storage tasks without having to build an entire system — one that you could literally take out of the box, plug in, play and forget about.

Thin servers, though unfamiliar to most users and resellers, generated over $1.1 billion in sales in 1997 and are expected to grow over the next five years to reach $16 billion. Though the majority of thin servers are used as device-controlled print servers, NAS using thin server technology is projected to become one of the industry's hot market segments. A host of thin server vendors and products already exist with many more expected. Most thin server-based NAS products involve file services that include caching Web-servers, NFS (mostly UNIX) and SMB file servers (for Microsoft environments).

According to research firm Dataquest (San Jose, Calif.), thin servers are a network-based hardware device designed to perform a specialized set of server functions. The following is a short list of components and attributes that comprise NAS thin servers:

Ease of Installation. Anyone should be able to set up a thin server in less than 15 minutes. The end-user connects the device to a network with minimal configuration settings. No software installation on the server or client should be required. A thin server should be self-maintaining and require little maintenance over its life.

Low Total Cost. Thin servers must be less expensive than traditional server alternatives in a given market. The lower cost can be seen in the purchase price but definitely must be seen in the overall cost of using the device.

Optimized Software Architecture. The OS should be minimal and include mechanisms needed to support the core application(s). Those applications and their associated utilities should be the only software running. End-user upgrades can be done over the network without taking the thin server offline.

No Network Operating System License. End-users should be able to connect an unlimited number of clients to the thin server without incurring per-seat licensing fees.

Network Connectivity. LAN connectivity is a requirement. WAN via modem is optional.

Storage Connectivity. Internal or external via any I/O architecture. External connections must be industry standard.

Open-Standards. Supports Novell, NetWare, Windows NT, UNIX, OS/2 and Macintosh NOSes. NFS, NCP, SMB may be supported to provide greater ease of use for certain types of clients, but should not serve as the primary protocols.

Remote Management. Performed via a Web browser by any client. No monitor or keyboard attaches to the thin server.

There are many NAS vendors with thin server-based disk primary solutions currently available. They include Auspex, Axis, Creative Design Solutions, HP, IBM, Meridian, Microtest, Mylex, Network Storage Solutions, Network Power & Light, Network Appliance, Omitex, and Procom. Tape storage vendors like ATL Products will soon be introducing turnkey automated backup products. These network attached storage libraries will come complete with server, backup software, tape drives, tape libraries and robotics and will be used for "lights-out" backup and restoration that can be centrally administered from anywhere on the Web.

Dataquest anticipates revenue for thin server-based NAS will account for 53 percent of total thin server revenues by the year 2000 and 66 percent (of an $11 billion market) by 2002. ◆

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Fighting Fires With Ignite/UX

For most people, summertime is vacation time. For many system administrators, being on vacation is not complete retreat from work. With beepers, cell phones, e-mail, and voice mail, many a good vacation is strained with occasional work interludes. My summer vacation is no different. Being dumb enough to check voice mail from the phone in the campground, I found out that this column was overdue while hanging around in the Adirondack Mountains.

That is why I am now sitting on a rock with my laptop and cellular modem on the shores of Lake Eaton. I can think of worse environments to be working in. I can also think of worse interruptions to a vacation — like being away when a workstation needs to have software reloaded since no one back at work can seem to fix the problem. There are so many things that can go wrong during a load and configure, it would sure be nice to make it foolproof and automatic.

Well, setting up for automatic installations is much easier than it used to be. Just before going on vacation I spent a month working on a new class that covers HP's not so new *Ignite/UX* product. I'd been hearing about it, but until I dug into it, I had no idea just how good it was. If there is interest, we will have a series of columns on the details.

As all administrators know, loading software is a pain. Actually getting the bits on the disk can be pretty simple, especially if you have pre-made configuration files, and network depots. But that is rather time consuming. Then there is also configuring the host after the software is loaded (adding the applications and configuring the network and other daemons). Many people automate the configuration process with scripts. This procedure, assuming nothing goes wrong, is typically about three hours or so.

THE HISTORY OF FIRE

For years now, administrators have come up with an alternate method of installation on UNIX workstations. This consists of making a disk that has exactly what you want loaded on it, often called the "golden image," then copying this entire disk in some way to the target disk. When the target boots from the new disk, it must be configured with "host personality" data in some way. This is generally much faster, as you are just copying the data rather than installing all the bits and pieces.

The problems with these methods are many:

- Everyone has to create their own method, which takes lots of time.
- There is no support available.
- What works on one release might not work on the next.
- Because they are homegrown, they often are not fully thought out.
- It is too much work to go back and rework them to include more capabilities.

The beauty of these "copy installs" is that they are often accomplished in well under one hour. Thirty minutes from start to finish is quite common.

There have been many white papers written about how to "break into" HP-UX's cold install procedure, and use it to perform a copy image type install. After HP Labs got wind of this idea, they became interested. There is nothing better than an interested software developer.

After spending a great deal of time looking to see what customers were doing, and would like to be doing, as far as cold installs, they went out and wrote *Ignite/UX*. It takes in what people had been doing for fast installations, then adds a bunch of tools to make it all easier. They also included lots of hooks for customizing.

This is one of the first products I have ever seen that actually has more capabilities than I asked for and, to top it off, it's free!! For the latest version, hunt under **www.software.hp.com**, but it also shows up on CD-ROM. The product was first made available in May 1997. Be sure to read about all the necessary patches, but then, that is no surprise to anyone with software experience.

First of all, *Ignite/UX* is **not** NetInstall. *In fact, if NetInstall is loaded on a machine, it must be removed before* Ignite/UX *can be installed.* NetInstall allows you to boot a workstation over the network, then use **swinstall** to load software. *Ignite/UX* can do that, but has many more abilities.

Ignite/UX allows us to use an archive method of installation (copying a compressed golden image across the network) as well as a **swinstall** session. *Ignite/UX* also allows us to setup many possible configurations, then

choose one to be installed during a session. These configurations can control what software is loaded, as well as how both the disk and file systems and the software itself is configured. You can manually choose a configuration, or allow some "code" to choose one based on hardware of the workstation being installed. *Ignite/UX* also allows us to perform simultaneous push installations from the Ignite server.

Ignite/UX is loosely based on the old cold install methods. As far as the steps go, its real beauty is in the tools provided to make it all easier to configure and the ability to make it all work hands-off for true fully automatic installations and especially, re-installations of trouble hosts.

LIGHT THE FIRE

The basic network cold installation works by copying a special kernel and memory based "file system" from the Ignite server to the target host's disk, then booting from that kernel. The boot kernel runs the **init** program in the memory file system. That version of **init** will start the Ignite session by performing some setup, then contacting the Ignite server. A configuration will then be chosen which contains instructions on how the installation should be performed.

Though many of the benefits of Ignite are based on the use of configuration files, you never actually have to edit one. Many people (once they know about Ignite) will want it for the ability to perform push installs and re-installation of troubled hosts.

Once *Ignite/UX* is installed (making a host into an Ignite server), and the basic Ignite server configurations are done (like telling it some default network information, setup the boot server and giving it a software depot), you can immediately start using Ignite to install software. This can be done by walking to a host, shutting it down and during the reboot, hold the escape key to stop at the search for boot device prompt.

At this prompt, you can search for network install devices or just tell the host to boot from the LAN and supply the address of the Ignite server. An easier way to start an Ignite session is if the target host is booted, go the Ignite server and run **ignite**. Using the GUI, you can tell it to reboot a host for an installation session. It will copy the new kernel and filesystem file to the target, then have it reboot, automatically coming up in Ignite session mode. The **bootsys** command (run on the Ignite server) can also start a remote Ignite session on a target host.

At this point you will see a GUI (either on the target or on the Ignite server, depending on how you configured the server or which options you used in the **bootsys** command) where you can choose a disk/file system configuration, and then select software to be loaded (using **swinstall**). The nice part of this method is the ability to perform all the work and monitor the installation from the Ignite server.

In fact, if NetInstall is loaded on a machine, it must be removed before *Ignite/UX* can be installed.

Once you have gone through the steps, this configuration can be saved for future use on similar hosts. It will also be saved automatically as the configuration for this particular host (the per-host config file). The beauty of Ignite over the typical network cold installation is that if trouble ever happens, you can re-install that host with one **bootsys** command, telling it to reuse the per-host configuration.

As mentioned above, making a disk image then copying it to the target disk is much faster than using an installation tool (such as **swinstall**), though you have less verification taking place. If you want to perform an image installation (called "archive method" installation in Ignite), here are the general steps.

First, you must install all desired software onto a host. This can include the OS as well as applications and local data files. Next, you configure the OS as needed. This will be the "golden image." Ignite provides a shell script that can now be run on that host to create an archive (using **pax** or **cpio** or whatever you want), then compressed (using **compress** or **gzip**). You must edit this supplied script (**make_sys_image**) as to which files and directories should be included or omitted from the archive. Next, you "register" the archive image into Ignite by building a few config file entries that describe it. After that, you can select the archive to be installed instead of selecting software from **swinstall**. A typical OS installation using archives takes under half an hour to perform.

SPONTANEOUS IGNITION

If you are willing to do the work, you could spend some time with the configuration files to edit the program content. For example, you might look at how much memory the host has to size swap space, or look at how many or how big the disks are to decide on a file system layout. You can then configure DHCP to assign IP addresses and other network required information.

You can also write some shell scripts that can be assigned in the Ignite configuration files to be executed at one of several times during the session. These can be used to finish up any configuration steps needed to make the host fully operational in the network.

Finally, create some per-host configuration files that determine which general configuration a particular host should use. After that, anytime you need to install, or re-install a host, just execute **bootsys** from the Ignite server targeting that host, then go on vacation.

Heck, you could even re-install a host from a rock near a pond if you have a cellular modem and a laptop. Nahhh, I'm going back to fishing instead. ◆

If this column got you fired up for more, send Fred an e-mail and let him know. But wait until he gets back from vacation.

Ryan Maley
ryan@maley.org

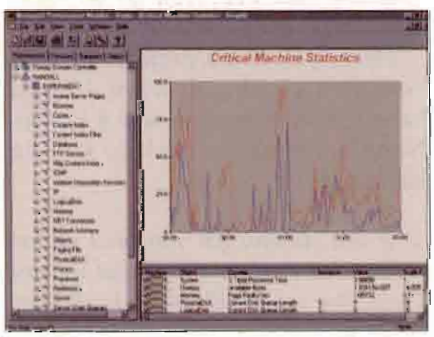
X-treme Network ManagemeNT

ManageX is one of the newest members of HP's OpenView series of system management

products and services. Unlike other UNIX-ported network management tools, it's designed for NT, taking advantage of Microsoft technologies like the Distributed Component Object Model, the Microsoft Management Console (MMC) and ActiveX.

A Performance Monitor (PM) component performs a similar function to the Performance Monitor built into NT — both collect data to analyze performance by measuring *counters* related to *objects* on a system.

The ManageX PM window features two panes — a data collection area which displays your network configuration and a data viewing area for graphical or list display. To monitor data, create a new chart, bar graph or list with three picks from the menu bar. Your new chart is displayed in the right pane. From the left pane, select the system, object and counter to monitor and drag it to the right. You can compare multiple machines, group machines with similar functions and compare the cache hits for all your servers on the same chart.



A ManageX performance monitor screen showing some critical machine statistics.

GENERATION OF X ALERTS

ManageX PM alerts can be triggered by something very simple, like free disk space dropping, or by establishing seven different criteria, including between and not equal. This allows for complex triggers like if free disk space is between 10 and 20 percent log the event but if free space is less than or equal to 9 percent, notify an administrator.

ActiveX scripts allow for monitoring multiple counters. Suppose you're consistently logging over 90 percent disk time usage. You're not sure if you need to add a drive to your system or if some other factors are causing excessive disk usage. A shortage of RAM, for example, may cause excessive memory paging. An alert can watch both Logical Disk and Memory objects. If the percentage disk time is over 90 **and** the pages per second is greater than one, perform an alert.

With NT's PM, an alert can trigger a batch file or executable and gets stored in a log. In ManageX PM, alert actions include sending a console message, sending e-mail, recording the alert in the Event Log or in a file, sending an SNMP trap and executing a batch file or an ActiveX script.

MANAGEMENT IN A SNAP—ALMOST

The Management Console (MC) portion of ManageX actually manages your servers by using *snap-in* objects that perform specific management tasks. These snap-ins can be used to create a *management view* which can be customized for the functionality a specific administrator might need.

Most snap-ins feature *policies* that let you customize your environment. Over 100 policies that include checks for the number of processes and threads running, Internet Information Server services and CPU and disk utilization are provided with ManageX. One useful policy checks that the standard NT services which are supposed to automatically startup at boot actually do start.

I had some problems with ManageX. The MC could not install Microsoft snap-ins although they did appear as options while installing others. It would be a big benefit to be able to add third party snap-ins since it seems unlikely that Oracle and others will want to write different ones for Microsoft and HP. The auto discovery feature which should find other manageable machines on the network worked only intermittently. My demo version, however, may have been constrained to only support certain features and may have limited the number of manageable machines.

The list price is $2,995 and a demonstration version is available at www.openview.hp.com/managex. ◆

Ryan Maley is a Microsoft Certified Systems Engineer and the information systems manager for a Midwestern manufacturing company.

HP Professional

Integration
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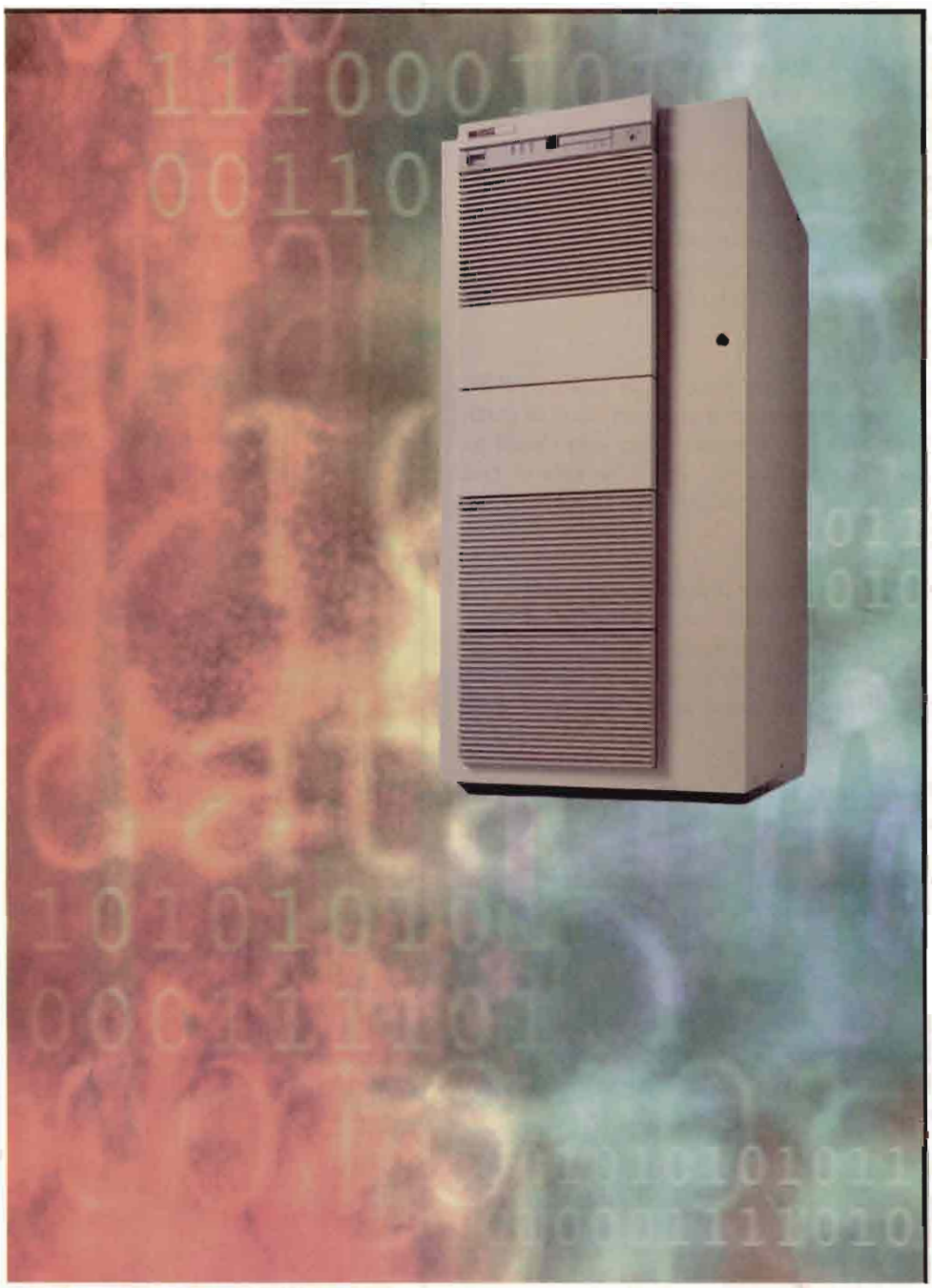
HP 3000 SOLUTIONS



Harry Sterling
HP CSY GM

Winston Prather
HP 3000
R&D Manager

Just Say Yes To IA-64 . . . S-44

Harry Sterling and Winston Prather answer questions on the state of the HP 3000.

Roadmap To The Next Millennium S-45

It's been a long trip already and it's not there yet. See where the HP 3000 is going in the next few years.

Product Brief S-45

Bradmark Technologies' MPE Command Center.

Vertical Markets Beckon The HP 3000 . . . . . S-46

The sky's the limit.

Just Say Yes To IA-64

If you're a loyal HP 3000 user, I know you've been celebrating the "re-birth" of your beloved HP 3000. And by most accounts, you'll be joined by groups of new users, particularly in vertical markets (see our story on page 46).

To discuss the HP 3000 market present and future in more detail, Editor-in-Chief, George Thompson spoke with Harry Sterling, general manager of HP's Commercial Systems Division and Winston Prather, HP 3000 R&D Manager.

Q. Are you surprised by the new growth in the HP 3000 market?
H.S. In the beginning of 1997 [when the growth started], I was surprised. However, once we spoke with our customers and found out what they were thinking, it made a whole a lot of sense.

Q. What were they thinking?
H.S. Many of our customers thought they would replace their [non-Y2k-compliant] applications before the Year 2000. But now that they *have to do it*, they want to keep the same platform. We've also heard that the single largest expense for our customers is retraining people.

Q. What were customers thinking about Windows NT?
H.S. Many of our customers have Windows NT servers of one sort or another. And they are thinking that if going to UNIX [platforms] is unclear, then let's just interoperate with the NT servers we have. We've made a lot of investment to make it easier for the HP 3000 to work with NT and UNIX.

Q What are your transition plans for IA-64?
W.P. Our transition will look very similar to our move from CISC to RISC [back in 1986]. There will be object code translators and object code dynamic translators, so that customers will not have to recompile if they don't want to. All their existing apps will be binary compatible. So, they'll be able to take object code from the HP 3000 and put it on the HP 3000 (with IA-64) and run it without modification.

Q. What's the agenda for helping ISV's to make the transition to IA-64?
W.P. It's a very minor transition for them. They will run existing binaries. So, you don't have to recompile initially. And performance, this time around [compared with the transition to RISC] will be much better. We expect only a 10 percent degradation [from the native performance] in the user code space running though on object code translator.

Q. At this point, the growth of the HP 3000 in the U.S. looks rather positive. But you mentioned a "substantial growth in Europe." To what do you attribute that?
H.S. A stronger focus on the resellers. Dedicated teams of reseller reps that have worked effectively with DARs and distributors in Europe. We're also working across continents now to bring applications from Europe to the U.S. and vice versa.

Q. What about the Asian market?
H.S. We've not been traditionally very strong in Asia. But one area of new growth is in airline reservations. We closed several deals in Japan and Tawain. And we're working in China right now.

Q. Does the HP 3000 compete directly with the IBM AS/400?
H.S. In some areas, yes. But in the airline reservation and mail order segments, we have very little competition. In the medical area, the IBM mainframe is a competitor. But [the HP 3000] is a lower cost solution.

HP Professional

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HP 3000 Roadmap

	1997	1998	1999	2000	2001
997 (1-5 Way)	20-30%		20-30%	>30%	20-30%
9x9KS (1-4 Way)	20-30%		20-30%	>30%	20-30%
9x8	20-30%		20-30%	>30%	20-30%
Internet & Interoperability	•32-bit ODBC Support •100 BaseT Links •100VG AnyLAN Links •TCP/IP Connections Increase to 5300 •Increased FDDI Cards Supported	•NetScape Server •Samba Support (NT Integration) •Java Support (JVM, JIT Comp. & JDK) •Domain Name Server •Enhanced FTP	•Java Perf. Tuning •JDBC Support	•More Network Sockets •Increase TCP/IP Connections to > 15K •1 Gbit LAN Links	
High Availability	•Shareplex/iX Enhance •Shareplex/iX Clusters	•EMC Array SRDF •EMC Array TimeFinder •HA Array FailOver	•HA Support of New Platforms		
Capacity MPE/iX	•Year 2000 Support •More Effective Use of Protection Ids •400 DTCs Supported	•Multiple Job Queues •>4GB Disk Boot •Improved MP Scaling •More Effective Use Of Space Regs. 6&7	•511 Disk Spindles •18 GB LDev Capacity •2600 Virtual Terminals •User Configurable CI	•1023 Disk Spindles •Initial 64-Bit MPE/iX Support •Files >4GB •Memory >3.75GB •Increased DSTs	•10K Processes

Product Briefs

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fax: (713) 621-1639

AdLink

Bradmark Technologies' (Houston, TX) new MPE Command Center is a Windows-based 32-bit GUI application that performs HP 3000 enterprise level monitoring with a true Windows look and feel.

From a single NT workstation, the Command Console allows an administrator to view all the systems in the enterprise, monitor and manage all HP 3000s and RDBMS databases, deliver capabilities not supported by OpenView and monitor system level metrics.

With the industry emphasis on Windows-based interfaces, "HP 3000s needed to be brought up to the state of the art," says Brad Taschenberg, Bradmark's president and CEO. "MPE operators should be traversing to the GUI world."

Taschenberg, calling Command Center a "true client/server product," adds that operators can maintain accounts on a drag-and-drop basis, move files, ping the environment and issue warnings and identifiers. Version 2, announced at this year's HP World, has performance monitoring and event management alarm capabilities with a direct interface to OpenView.

MPE Command Center's client requires a Pentium-based PC with at 16 MB of Ram, 16 MB disk space, Windows 95/98 or NT 4.0 and Winsock.dll. All HP 3000s must be TCP/IP enabled.

Vertical Markets Beckon The HP 3000

Ken Deats,
Associate Editor

A significant force driving the HP 3000 on the road to the new millennium is the growth in several vertical marketplaces. Harry Sterling, HP's general manager of the Commercial Systems Division says that success should continue unabated because each of the vendors listed below has announced support for the transition of their MPE/iX applications to HP 3000's upcoming IA-64 implementation.

Airline Reservation Systems

"There's lots of spending going on especially in the reservation area," says Sterling. "A lot of these carriers are running on systems that are not Year 2000-compliant or they have contracts that are expiring and they're looking for a lower cost solution."

He touts the OpenRes reservation technology developed for MPE/iX by OpenSkies, Inc. (Salt Lake City, Utah) and the recent purchase of the software by Go!, a new subsidiary of British Airways, New Zealand-based Freedom Air and the recently-named Best Low-Fare Airline of 1998 by Entrepreneur magazine, AirTran of Orlando, Fla.

Speaking of the Go! installation, Sterling said the airline's IT team was especially pleased with the ease of implementation. "From the decision making to taking reservations was only six weeks. That's the kind of solution the customers are looking for."

Mailorder/Catalog Sales

Smith-Gardner & Associates (SGA; Delray Beach, Fla.) develops, installs and supports MACS (Mailorder And Catalog System), the industry-leading solution for companies that sell through catalogs, direct mail, print and broadcast advertisements and the Internet.

MACS users process an estimated $12 billion in annual catalog and direct mail sales. SGA selected the HP 3000 as a key technology platform "because of the consistent reliability, availability, cost-effectiveness and superior transaction processing these systems have delivered for customers," according to company literature.

With versions of MACS for UNIX, NT and the Web as well as MPE/iX, SGA is drawn to the HP 3000's high level of interoperability for their customers in heterogeneous environments.

Credit Unions

Based on the results of the 1997 Credit Union Technology Survey, SUMMIT Information Systems (Corvallis, Ore.) serves more $250 million credit unions than any other data processing vendor — almost one in four has selected SUMMIT's technology, nearly twice as many as their nearest competitor. SUMMIT tracked the most credit union assets in the country in 1997, almost $36 billion - a total that ballooned from $31 billion the previous year.

Like so many other IT providers, SUMMIT chose the HP 3000 as a key platform because of its reliability and ease of implementation. In fact, SUMMIT has been a five-year recipient of HP's Premier Solution Partner award, the only one serving the credit union industry.

Manufacturing Software

eXegeSys, Inc. (Salt Lake City, Utah) develops and implements software and hardware solutions that enable their customers to effectively manage their manufacturing enterprises. Their eXegetic **Resource Planning, an enterprise** resource planning suite based on HP Manufacturing Management II, enables manufacturers to improve their organizational management, including financial management, manufacturing and material management and capital maintenance.

"Our customers require computing infrastructures that not only meet existing needs, but also support future expansion," says Paul Dorius, president and co-founder of eXegeSys. "We've chosen the HP 3000 as a key computing platform to deliver complete solutions." ◆

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KSAM & MPE file Access	✓
PowerHouse Support	✓
SECURITY	
Field Value Security	✓
User Profiles	✓
Dataviews	✓

For years, DataExpress has made it possible for you to selectively and rapidly extract data from HP3000 data structures. Now, with the ODBCLink option of DataExpress, M. B. Foster Associates continues to create the tools today, for the needs of tomorrow.

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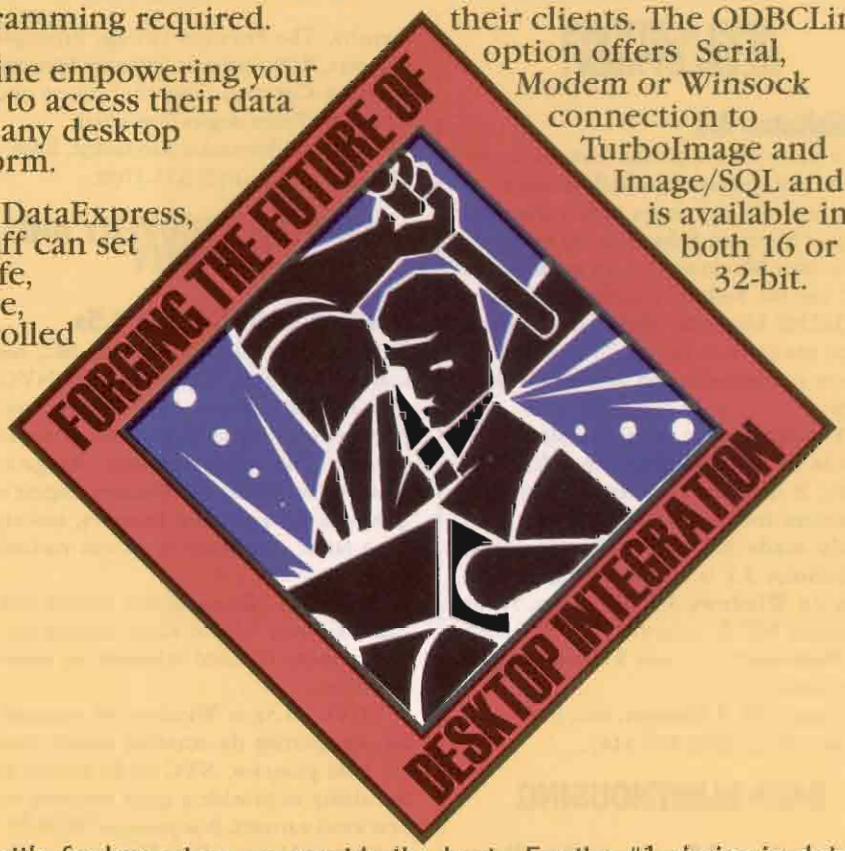
With DataExpress, IT staff can set up safe, secure, controlled environments and custom views, to allow end users access to their own data. With a simple click or keystroke, users can automatically download their information to their desktop applications - freeing up IT time for more complicated projects.

M. B. Foster Associates' ODBCLink/SE was chosen by Hewlett-Packard as the best solution available for their clients. The ODBCLink option offers Serial, Modem or Winsock connection to TurboImage and Image/SQL and is available in both 16 or 32-bit.



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APPLICATIONS DEVELOPMENT

WhizNotes 3.1

WhizNotes uses hypertext features to create virtual folders specifically designed to organize your text notes with a drag and drop of hypertext links. You can turn your notes into Windows Hypertext Help files and use the built-in NotePad-like editor for HTML files with HREF links. A right-click menu tool called "WhizMenu," inserts customizable text and HTML templates.

You can directly open multiple HTML files in separate NotePad-like editor windows. It includes a smart text template insertion tool called WhizMenu, with ready made basic HTML templates. WhizNotes 3.1 is a 16-bit program and runs on Windows 3.1, Windows 95 or Windows NT. It supports long file names on Windows 95. It costs $50 for a single-user license.

➤Contact Pik A Program, Inc., New York, NY at (800) 867-3447.

DATA WAREHOUSING

Information Advantage Unveils International OLAP Solution

Information Advantage Inc. announced its expanded DecisionPartners program that will extend Information Advantage's partnering strategy to deliver solutions that include systems integrators, solution development partners and alliance partners.

New DecisionPartners members are Business Computing Solutions, Cambridge Technology Partners, Claremont Technology Group, CSI, DecisionSmith, Integrated Information Solutions, Integral Results, The Praxium Group, Principle Partners, RDI, Strategic Software Systems, Sterling Carteret, SuperSolutions and Thomson Technologies Consulting.

➤Contact Information Advantage, Eden Prairie, MN at (612) 833-3700.

DISASTER RECOVERY AND SECURITY

Norman Virus Control 4.5x

Norman Data Defense Systems, Inc., has released Norman Virus Control (NVC) 4.5x for fast removal of all known types of computer viruses, including macro viruses. The most important change in version 4.5x is that the scanning engine is now split from the host program, making for a faster cure when new virus variants occur.

The Virus Library in this version also has a separate tab for macro viruses providing more detailed information about the viruses.

NVC v4.5x is Windows 98 compatible. By splitting the scanning engine from the host program, NVC v4.5x allows us the ability to provide a quick solution for new virus variants. It is priced at $129.95.

➤Contact Norman Data Defense Systems, Inc., Fairfax, VA at (703) 573-8802.

E-COMMERCE

Visual AccountMate Internet Sales Order

AccountMate Software Corporation, IBM and Cisco Systems, Inc. have teamed to provide Visual AccountMate/SBS Internet Sales Order, IBM's Netfinity 3500 hardware and Cisco System's Networked Office stack. AccountMate's Visual AccountMate (VAM) Internet Sales Order program, written in Visual Basic 5.0, lets registered customers place orders over the Internet via a secure connectivity program separate from a typical Internet browser. Customers can create a sales order (or quote) that passes from the Internet server into Visual AccountMate/SBS SO. This enables vendors to provide "virtual" customer service on a 24-hour, 7-day basis.

➤Contact AccountMate Software Corporation, Inc., Mill Valley, CA at (415) 381-1011.

MESSAGING AND E-MAIL

SoftLinx Replix DominoFax 4.2

SoftLinx, Inc. has released version 4.2 of Replix DominoFax, for native fax integration with Lotus Notes and Domino. Replix Domino Fax uses the Lotus Notes address book and, with the addition of a fax address option, provides fax messaging with the Lotus Notes Mail template.

Enhancements include foreign domain support so users can address faxes using Notes foreign domain addressing mechanism and high fidelity fax output for native Notes documents which rasterizes all embedded graphics and other objects so users see the same output as in a native Notes document.

➤Contact SoftLinx, Inc., Westford, MA at (978) 392-0001.

MULTIMEDIA

PowerLISP Solutions' AutoTag 9.0

Auto Tag is an ObjectARX application for AutoCAD Release 14 that maintains up-to-date information about a drawing and displays it in a drawing tag. Information on a drawing's editor, project/job number, drawing name, sheet size, plot scale and time and date all become automatically updated to reflect the current status of a drawing each time you save it.

It supports multiple tags and positions, scale factors, and rotation angles. Import and Export options simplify installation and maintain consistent settings company-wide. AutoTag costs $135 for a basic license and $25 for each subsequent license.

➤Contact PowerLISP Solutions, Little Rock, AR at (501) 661-1695.

MDL's Plugin for CATIA 4.2

MDL Corporation announced its Communique! Conferencing Plugin to Dassault Systemes CATIA CAD 4.2.0 development package which replaces the

video and audio portions of the Groupware Conferencing product that was embedded into CATIA versions 4.1.7, 4.1.8, and 4.1.9. This video conferencing product enables users of CATIA CGW to have cross-platform video, audio, and whiteboard conferences over their networks. These CATIA users are able to hold video conferences with non-CATIA users of Communique! on their network.

MDL will sell and maintain the Communique! Conferencing Plugin directly. IBM will distribute Communique! with CGW 420 for CGW 417, 418, or 419 customers.

➤Contact MDL Corporation, Redmond, WA at (425) 861-6700.

NETWORK INTEGRATION

Pragma Systems Adds Telnet To Ingres II

Pragma has partnered with Computer Associates International, Inc. to deliver remote Telnet and terminal support to CA's Ingres II RDBMS with "wrapper" technology and has joined the CA Development Partner Program.

Pragma's InterAccess TelnetD and Terminal Server extends Windows NT to a multi-user system. It allows multiple users from any machine with a telnet client to log into a single NT machine and run Ingres or other applications like 16-bit, 32-bit console, character mode, or DOS applications remotely over telnet. InterAcess products are designed to work with NT's native security for access controls.

➤Contact Pragma Systems, Inc., Austin, TX at (512) 219-7270.

Affinity Systems' Visara Windows Based Terminal

The Visara Enterprise Windows Based Terminal (eWBT) is a centrally managed thin client product that provides users with simultaneous access to multiple host systems, Windows application and Internet or intranet. Highlights are: run midrange, mainframe, Windows 95/NT, UNIX and DOS applications simultaneously; Citrix Systems' ICA Support; Microsoft's Remote Desktop Protocol support; TN3270, TN5250 and VT320 emulation; Windows CE operation system; Motorola Power PC thin client; hot key from emulation to applications.

It attaches to AS/400, S/390 and RS/6000, as well as HP and Digital through a TCP/IP Ethernet connection. Pricing should start at $699.

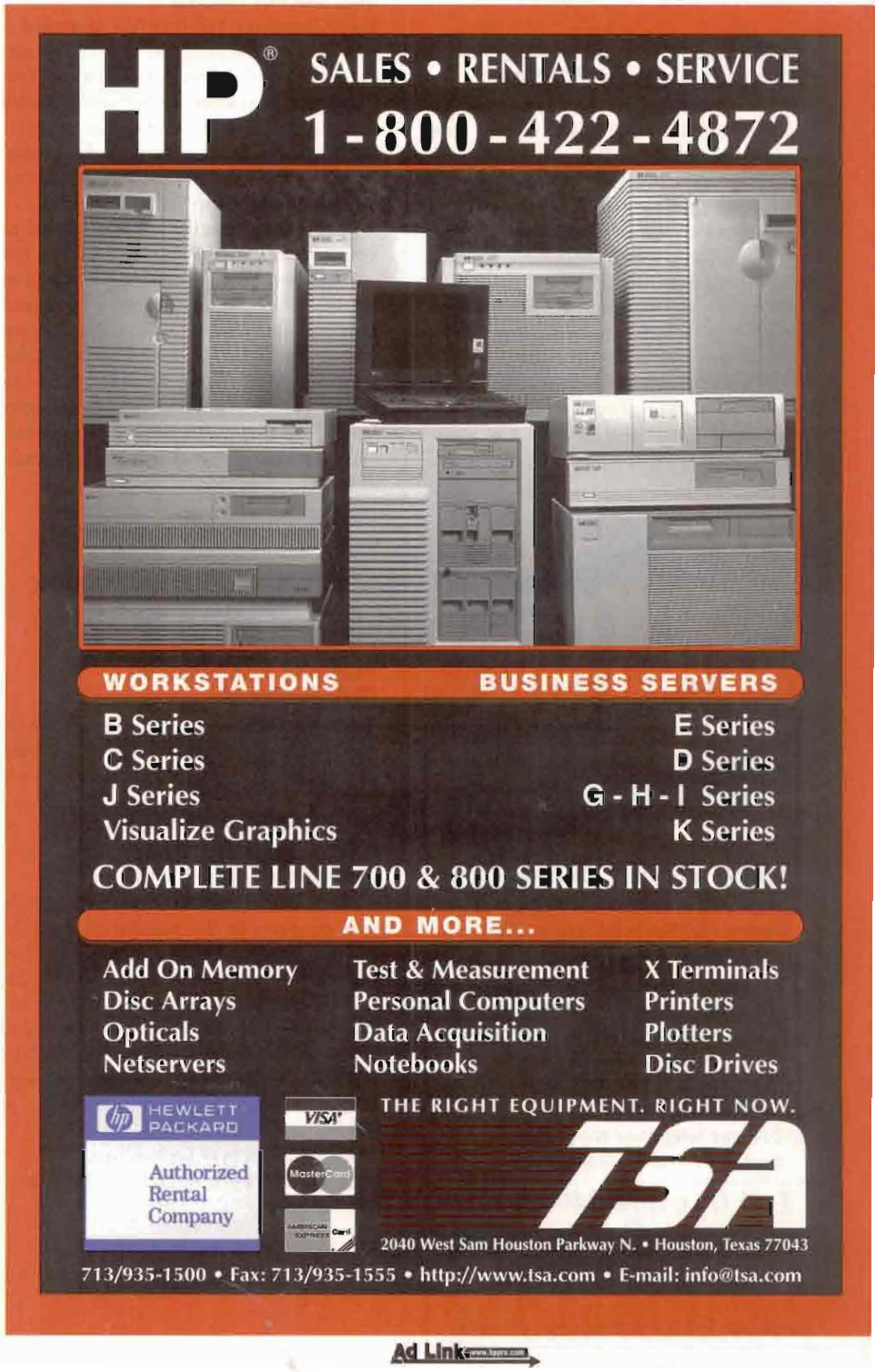
➤Contact Affinity Systems, Lansdale, PA at (800) 432-1774.

PRINTERS

Kentek's Next Generation Printer

Kentek Information Systems, Inc. has released the K40DX with 600dpi MultiSet electronic document collation, HP PCL 5e, TIFF and CCITT Group3/Group4 emulations and an output speed of 40 images per minute in simplex or duplex mode. A PostScript Level 2 option is also available.

The K40DX creates multiple original



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prints by transmitting the document once across the network then storing the image to disk. It is based on Kentek's SIG controller, which uses Intel Pentium processor technology, producing a scalable imaging platform.

➤Contact Kentek Information Systems, Inc., Boulder, CO at (303) 440-5500.

SERVICES AND SUPPORT

Citrix Launches Enterprise Solutions Channel Program

Citrix Systems, Inc. has expanded its Citrix Solutions Network with a new Enterprise Solutions Provider (ESP) program to address the sales, support and marketing requirements of system integrators and value-added resellers who service global customers with large-scale application deployment needs.

The channel program is comprised of more than 3,000 value-added resellers, system integrators and distributors who sell and support WinFrame and MetaFrame thin-client/server software worldwide. Citrix will offer its ESP members a variety of services including comprehensive field and headquarters support, customized marketing programs, marketing and collateral funding, escalated technical support, and technical and sales training.

➤Contact Citrix Systems, Inc., Fort Lauderdale, FL at (954) 267-3000.

New Website For Technology and Career Issues

Volt Computer Services has launched a new Website focusing on technology and career related issues for Software Test Engineers, Developers in Software Quality Assurance and Software Localizers. **www.softwaretester.com,** provides professionals with a comprehensive, interactive information tool and knowledgebase.

The site's resources are not limited to information about testing technology, but features resources concerning career and lifestyle issues, links to testing tools and publications and a discussion group addressing concerns, problems and solutions in the testing arena. An Idea Exchange offers a forum for IT managers and Test Engineers to publish professional views and articles and includes a searchable career database.

➤Contact Volt Services Group, New York, NY at (212) 704-2400.

SYSTEM AND NETWORK MANAGEMENT

Protocol Analyzer For FM0 Protocol

Telebyte Technology announced a new Model 905 Comscope Protocol Analyzer that supports communications protocols that use FM0. The new Comscope includes support for 'bi-phase space' or 'FM0' encoded data, HDLC packets up to 230,400 bps and the RS-485 interface.

The Model 905 is an external device that connects to the parallel port of the PC. It is equipped with a range of built-in interfaces that include RS-232, RS-422, RS-485 and V.35. Selection of the interface is user defined under program menu selection. It operates in ASYNC, SYNC, HDLC or UNKNOWN whereby any serial data can be deciphered. The cost is $798.

➤Contact Telebyte Technology, Greenlawn, NY at (800) 835-3298. ◆

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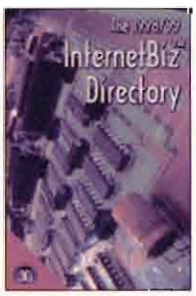

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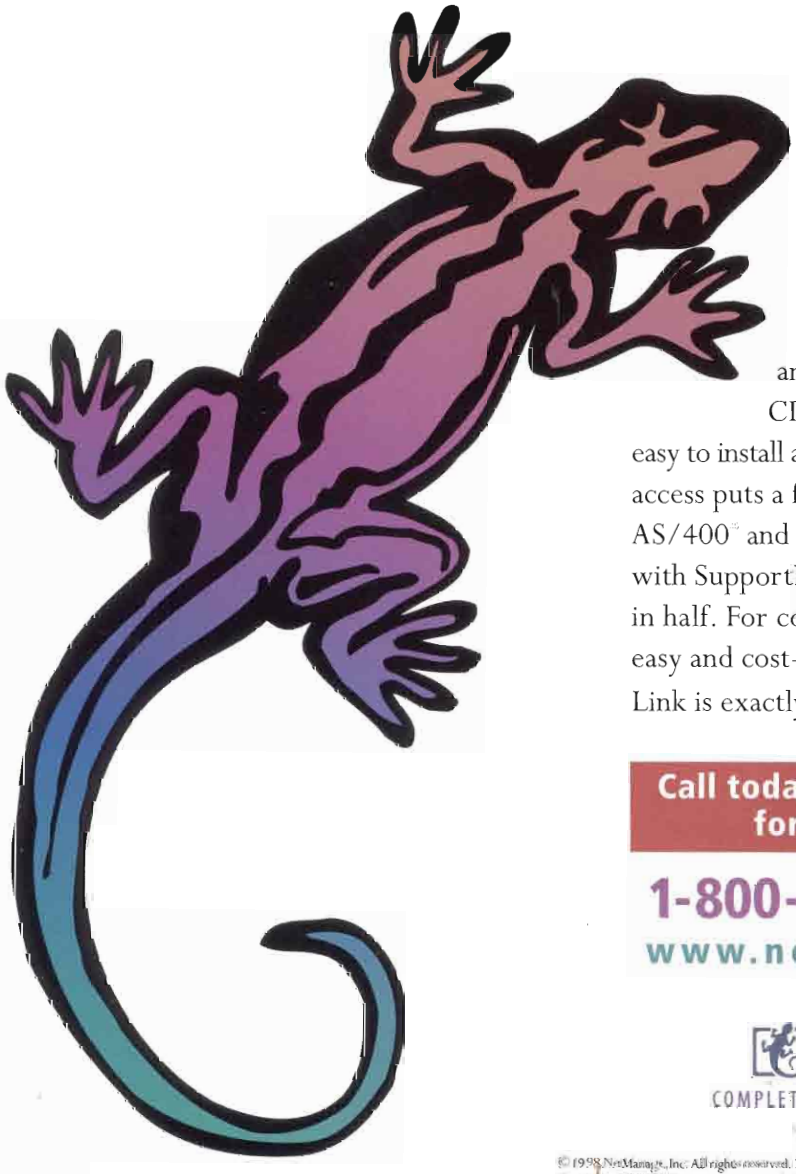

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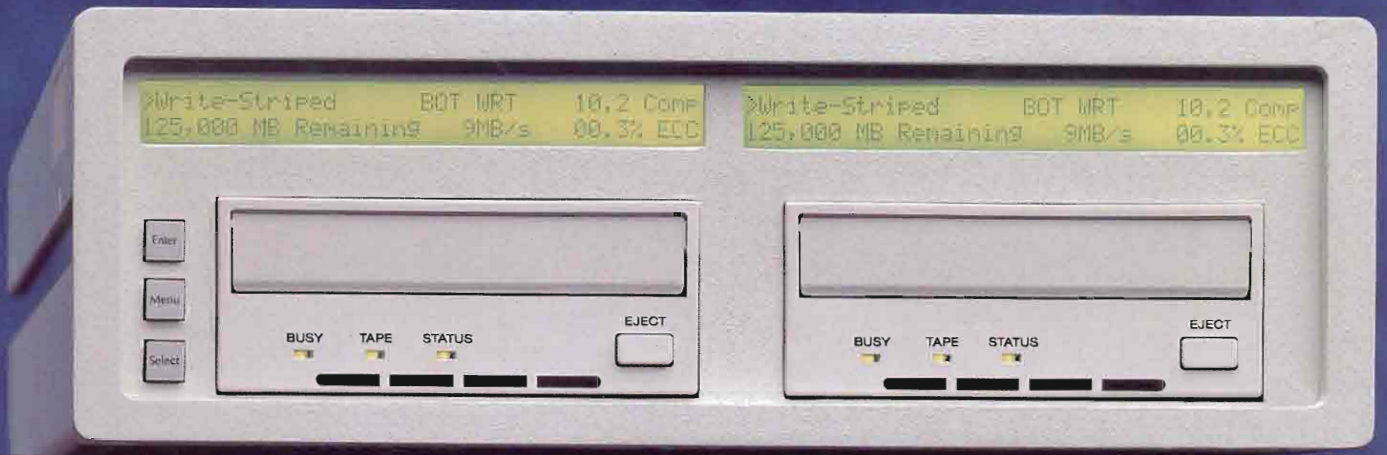

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